

284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789

8900, Fax: 908 789 8922

Prep Standard - Chemical Standard Summary

Order ID :	Q2275
Test:	VOCMS Group3
Prepbatch ID :	
Sequence ID/Qc Bate	ch ID: vx061225,
•	
Standard ID : VP133174,VP133887	7,VP133935,VP133953,VP133991,VP134142,VP134149,VP134305,VP134306,VP134307,
Observised ID	
Chemical ID : V13391,V13706,V142	290,V14432,V14435,V14503,V14504,V14525,V14526,V14613,V14620,V14626,V14636,V14637,V
	58,V14671,V14673,V14675,V14711,V14717,V14718,V14721,V14749,V14750,V14811,V14812,V14 V14944,V14945,V14946,V14947,W3112,
0.0,0.002.,0.0020,	



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Fax: 908 789 8922

VOC STANDARD PREPARATION LOG

Recipe ID	<u>NAME</u>	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
617	8260 Surrogate, 400PPM	<u>VP133174</u>	02/27/2025	08/27/2025	Semsettin Yesilyurt	None	None	03/04/2025

FROM 0.40000ml of V13706 + 24.60000ml of V14613 = Final Quantity: 25.000 ml

Recipe ID	NAME.	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
257	8260 Calibration Working STD Mix-First source, 160PPM	<u>VP133887</u>	05/12/2025	06/23/2025	Semsettin Yesilyurt	None	None	05/14/2025

FROM

 $0.40000 ml \ of \ V14843 + 1.00000 ml \ of \ V14432 + 1.00000 ml \ of \ V14435 + 1.00000 ml \ of \ V14503 + 1.00000 ml \ of \ V14504 + 1.000000 ml \ of \ V14504 + 1.00000 ml \ of \ V14504 + 1.000000 ml \ of \ V14504 + 1.00000 ml \ of \ V14504 + 1.00000 ml \ of \$

1.00000ml of V14525 + 1.00000ml of V14526 + 1.00000ml of V14711 + 1.00000ml of V14717 + 1.00000ml of V14718 +

1.00000ml of V14721 + 1.00000ml of V14749 + 1.00000ml of V14750 + 1.00000ml of V14811 + 1.00000ml of V14812 +

10.60000ml of V14921 = Final Quantity: 25.000 ml





VOC STANDARD PREPARATION LOG

	Recipe ID 247	NAME 8260 Internal Standard, 250PPM	NO. VP133935	Prep Date 05/16/2025	Expiration Date 11/12/2025	Prepared By Semsettin Yesilyurt	ScaleID None	PipetteID None	Supervised By Mahesh Dadoda 05/21/2025
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Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	Prepared By	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
218	BFB, 25PPM	<u>VP133953</u>	05/19/2025	11/09/2025	Semsettin Yesilyurt	None	None	05/21/2025

FROM 0.25000ml of V13391 + 24.75000ml of V14626 = Final Quantity: 25.000 ml





VOC STANDARD PREPARATION LOG

1.00000ml of V14944 + 1.00000ml of V14945 + 1.00000ml of V14946 + 1.00000ml of V14947 + 21.00000ml of V14620 = Final Quantity: 25.000 ml

Recipe ID	NAME	<u>NO.</u>	Prep Date	Expiration Date	<u>Prepared</u> <u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Supervised By Mahesh Dadoda
719	8260 Working STD (BCM)-First source, 400PPM	<u>VP134142</u>	06/06/2025	12/06/2025	Semsettin Yesilyurt	None	None	06/10/2025

FROM 1.00000ml of V14668 + 1.00000ml of V14671 + 1.00000ml of V14673 + 1.00000ml of V14675 + 16.00000ml of V14929 = Final Quantity: 20.000 ml





VOC STANDARD PREPARATION LOG

Recipe <u>ID</u> 1810	NAME 8260 Working Std(2-CVE)-800ppm	<u>NO.</u> VP134149	Prep Date 06/06/2025	<u> </u>	Prepared By Semsettin Yesilyurt	<u>ScaleID</u> None	PipetteID None	Supervised By Mahesh Dadoda 06/10/2025		
FROM	FROM 1.00000ml of V14636 + 1.00000ml of V14637 + 1.00000ml of V14638 + 1.00000ml of V14639 + 46.00000ml of V14929 = Final									

1.00000ml of V14636 + 1.00000ml of V14637 + 1.00000ml of V14638 + 1.00000ml of V14639 + 46.00000ml of V14929 = Final Quantity: 50.000 ml

Recipe				Expiration	<u>Prepared</u>			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Amit Patel
589	BFB TUNE CHECK	<u>VP134305</u>	06/12/2025	06/13/2025	John Carlone	None	None	
								06/13/2025

FROM 39.98400ml of W3112 + 0.01600ml of VP133953 = Final Quantity: 40.000 ml





FROM

VOC STANDARD PREPARATION LOG

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	<u>NO.</u>	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Amit Patel
620	50 PPB CCC, 8260-Water	<u>VP134306</u>	06/12/2025	06/13/2025	John Carlone	None	None	
								06/13/2025

39.94450ml of W3112 + 0.00500ml of VP133174 + 0.00500ml of VP134142 + 0.00800ml of VP133935 + 0.01250ml of VP133887 + 0.01250ml of VP133991 + 0.01250ml of VP134149 = Final Quantity: 40.000 ml

Recipe				Expiration	Prepared			Supervised By
<u>ID</u>	<u>NAME</u>	NO.	Prep Date	<u>Date</u>	<u>By</u>	<u>ScaleID</u>	<u>PipetteID</u>	Amit Patel
620	50 PPB CCC, 8260-Water	<u>VP134307</u>	06/12/2025	06/13/2025	John Carlone	None	None	
								06/13/2025

FROM 39.94450ml of W3112 + 0.00500ml of VP133174 + 0.00500ml of VP134142 + 0.00800ml of VP133935 + 0.01250ml of VP133887 + 0.01250ml of VP133991 + 0.01250ml of VP134149 = Final Quantity: 40.000 ml



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30067 / BFB tuneing solution	A0191805	11/22/2025	11/22/2024 / SAM	01/13/2023 / SAM	V13391
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	estek 555582 / Custom Mixture, 8260 A/B Surrogate Mix [CS 5179-2]		02/27/2026	02/27/2025 / SAM	04/12/2023 / SAM	V13706
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	Restek 555581 / Custom Standard, 8260 Internal Std [CS 5179-1]		12/12/2025	12/12/2024 / SAM	04/15/2024 / SAM	V14290
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	09/30/2025	05/12/2025 / SAM	08/15/2024 / SAM	V14432
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #
Restek	30489 / VOA Mix, 8260B Acetates Mix, P&TM, 1mL	A0209618	09/20/2025	03/20/2025 / SAM	08/15/2024 / SAM	V14435
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95317 / Universal VOA Mega Mix (Min order = 5)	021624	11/12/2025	05/12/2025 / SAM	09/17/2024 / SAM	V14503



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.			11/12/2025	05/12/2025 / SAM	09/17/2024 / SAM	V14504
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	95319 / Revised Additions Mix (Min = 5)	091724	11/12/2025	05/12/2025 / SAM	09/18/2024 / SAM	V14525
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.			11/12/2025	05/12/2025 / SAM	09/18/2024 / SAM	V14526
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol,	22L0562016	08/27/2025	02/27/2025 /	11/26/2024 /	V14613
	Purge/Trap (cs=6x1L)		00/21/2020	SAM	SAM	V 14613
Supplier	Purge/Trap (cs=6x1L) ItemCode / ItemName	Lot #	Expiration Date		SAM Received Date / Received By	Chemtech Lot #
Supplier Seidler Chemical		Lot # 22L0562016	Expiration	SAM Date Opened /	Received Date /	Chemtech
	ItemCode / ItemName BA9077-02 / Methanol,		Expiration Date	Date Opened / Opened By 05/09/2025 /	Received Date / Received By	Chemtech Lot #



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	12/06/2025	06/06/2025 / SAM	12/06/2024 / SAM	V14636	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	12/06/2025	06/06/2025 / SAM	12/06/2024 / SAM	V14637	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	120524	12/06/2025	06/06/2025 / SAM	12/06/2024 / SAM	V14638	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Absolute Standards, Inc.	/ 2-Chloroethyl vinyl ether	vinyl ether 120524 12/06		06/06/2025 / SAM	12/06/2024 / SAM	V14639	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date /	Chemtech Lot #	
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0214960	12/06/2025	06/06/2025 / SAM	12/09/2024 / SAM	V14668	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0214960	12/06/2025	06/06/2025 / SAM	12/09/2024 / SAM	V14671	



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0214960	12/06/2025	06/06/2025 / SAM	12/09/2024 / SAM	V14673
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30225 / VOA Mix, bromochloromethane, 2000ug/mL, P&TM, 1mL/ampul	A0214960	12/06/2025	06/06/2025 / SAM	12/09/2024 / SAM	V14675
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	11/12/2025	05/12/2025 / SAM	12/17/2024 / SAM	V14711
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	11/12/2025	05/12/2025 / SAM	12/17/2024 / SAM	V14717
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml		11/12/2025	05/12/2025 / SAM	12/17/2024 / SAM	V14718
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30006 / VOA Mix, CLP method Calibration Std #1 ketones 5000uq/ml, PTM, 1ml	A02110618	11/12/2025	05/12/2025 / SAM	12/17/2024 / SAM	V14721



Supplier	ItemCode / ItemName	Lot #	Expiration	Date Opened /	Received Date /	Chemtech	
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	Date 11/13/2025	Opened By 05/12/2025 / SAM	12/17/2024 / SAM	Lot # V14749	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30042 / VOA Mix,500 series method 502.2 Calibration Std #1 gases, 2000uq/ml, PTM, 1ml	A0216826	11/12/2025	05/12/2025 / SAM	12/17/2024 / SAM	V14750	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0220471	11/12/2025	05/12/2025 / SAM	01/08/2025 / SAM	V14811	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	555408 / Custom Standard, Vinyl Acetate Standard w/ Grav [CS 5066-6] TWO SEPARATE LOTS	A0220471	06/30/2026	05/12/2025 / SAM	01/08/2025 / SAM	V14812	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Restek	30470 / VOA Stock Solution, tert-butanol std, 1mL, P&TM	A0217535	11/12/2025	05/12/2025 / SAM	01/21/2025 / SAM	V14843	
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #	
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)	24G0262002	11/12/2025	05/12/2025 / SAM	05/09/2025 / SAM	V14921	



Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA9077-02 / Methanol, Purge/Trap (cs=6x1L)		12/06/2025	06/06/2025 / SAM	05/09/2025 / SAM	V14929
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	91980 / Acrolin Std (Min = 5)	051925	06/19/2025	05/22/2025 / SAM	05/21/2025 / SAM	V14944
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.			06/19/2025	05/22/2025 / SAM	05/21/2025 / SAM	V14945
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute	91980 / Acrolin Std (Min =	051925	06/19/2025	05/22/2025 / SAM	05/21/2025 / SAM	V14946
Standards, Inc.	5)			O/AWI		
Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
		Lot # 051925	-	Date Opened /	Received Date /	
Supplier Absolute	ItemCode / ItemName 91980 / Acrolin Std (Min =		Date	Date Opened / Opened By	Received Date / Received By	Lot #

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 2310762004

Manufactured Date: 2023-08-11 Expiration Date: 2026-08-10

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.5 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrablė Base (µeq/g)	≤ 0.10	0.01
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis – Below EPA 8260B CRQL	Conforms	Conforms

For Laboratory,Research,or Manufacturing Use Performance Tested for Use in EPA Methods 500 Series for Drinking Water 600 Series for Wastewater 846 for Solid Waste

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC

Ken Koehnlein

Sr. Manager, Quality Assurance

Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 22L0562016 Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	Conforms

For Laboratory,Research,or Manufacturing Use Performance Tested for Use in EPA Methods 500 Series for Drinking Water 600 Series for Wastewater 846 for Solid Waste

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC



Methanol
ULTRA RESI-ANALYZED
For Purge and Trap Analysis





Material No.: 9077-02

Batch No.: 22L0562016 Manufactured Date: 2022-10-26 Expiration Date: 2025-10-25

Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay (CH3OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	≤ 1.0 ppm	0.2 ppm
Titrable Acid (µeq/g)	≤ 0.3	0.2
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	≤ 0.08 %	< 0.01 %
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	Conforms

For Laboratory,Research,or Manufacturing Use Performance Tested for Use in EPA Methods 500 Series for Drinking Water 600 Series for Wastewater 846 for Solid Waste

Country of Origin: USA

Packaging Site: Phillipsburg Mfg Ctr & DC



Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM Ree 03/17/24



ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Parl Number: 95317 Lot Number: 021624 Description: Universal VOA Megamix 69 components

Solvent(s): Lot# Methanol EG359-USQ12

Expiration Date: 021627 Recommended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 8UTB

021624 DATE 021624 DATE Reviewed By

		NIST Test	ID#: BUTB			5E-	05 Balance Una	pertulery								Till		021624
		Weight(e) shown below were combi	ined and dilut	ed to (mL):	: 10		21 Flask Uncer								Reviewed	By:	Pedro L. Rentas	DATE
						0.0	- FARM DICCI	(BEERLA										
			(RM#)	Lot	D	it. Init	al Initial	Nominal	Deutste	0					Expanded		SDS information	
		Compound	Part Numb						Purity	Punity	Uncertainty	Target	Actual	Actual	Uncertainty	(Soli	ent Safety Info. On Atta	ched pa.)
		THE RESERVE OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	7 auro I Washing	ACT LANGE	H PAG	acar ver (mL) Gond.(ug/m	sil) Conc (µg/ml	L) (%)	Uncertainty	Pipetre (mL)	Weight(g)	Weight(g)	Conc (ug/mL)	(+/-) (ug/mL)	CAS#	OSHA PEL (TWA)	LD50
	1. /	Acetonitrile	(0004)	****														ED30
		Allyl chloride (3-Chloropropene)	(0324)	02164				2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-05-8	40 man of the state of the state of	A CONTRACTOR OF THE PARTY OF TH
		Carbon disulphide	(0325)	10239				2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	40 ppm (70mg/m3/8H)	ori-rat 2460mg/kg
			(0060)	MKCR8	561 N	A N/	NA NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6			1 ppm (3mg/m3/8H)	orl-ret 700mg/kg
		sis-1,4-Dichtoro-2-butene	(1196)	147188	F N	A N/	NA NA	2000	95	0.2	NA	0.21058	0.21069		8.1	75-15-0	4 ppm (12mg/m3) (skin)	ori-rat 1200mg/kg
		rans-1,4-Dichloro-2-butene	(0486)	MKBP60	41V N	A NA	NA NA	2000	96.5	0.2	NA.	0.20731		2001.1	8.5	1478-11-5	N/A	N/A
		Diethyl einer	(0153)	IK18CAS	000C NJ			2000	99.9	0.2	NA		0.20748	2001.7	8.4	110-57-6	N/A	N/A
	7. E	thyl methacrylate	(0381)	06128F				2000	99	0.2		0.20025	0.20040	2001.5	8.1	60-29-7	N/A	N/A
	B. 1	odomethane	(0489)	SHBF87				2000			NA	0.20207	0.20230	2002.3	8.2	97-63-2	N/A	orl-rat 14800mg/kg
	9. 2	-Methyl-1-propanol	(0445)	15241E					99.5	0.2	NA.	0.20106	0.20121	2001.5	8.2	74-88-4	5 ppm(28mg/m3/6H)(skin)	orl-rat 76mg/kg
1		fethacrylonitrile	(0442)					2000	99.5	0.2	NA	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	orl-rat 2460mg/kg
1		ethyl acrylate		00427E				2000	99	0.2	NA	0.20207	0.20221	2001,4	8.2	128-98-7	1 ppm (3mg/m3/8H)(skin)	
		fethyl methacrylate	(1075)	SHEKOS				2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3		orl-rat 120mg/kg
			(0404)	MKBW51				5000	99.9	0.2	NA	0.20025	0.20041	2001.6	8.1	80-62-6	10 ppm(35mg/m3/8H)(skin)	
	_	Rtrobenzene	(0228)	01213T		NA NA	NA	2000	99	0.2	NA	0.20207	0.20220	2001.3			100 ррт (410тд/т3/ан)	orl-ret 7872mg/kg
	_	-Nitropropane	(0481)	14002J	X NA	NA NA	NA.	2000	97.3	0.2	NA	0.20560	0.20577		8.2	98-95-3	1 ppm (5rng/m3/8H)(skin)	orl-rat 780mg/kg
		entachloroethane	(0450)	HGA01	I NA	NA.	NA	2000	98	0.2	NA			2001.6	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-ret 720mg/kg
1	8. 1	1.2-Trichlorstriffuoroathane	(0474)	18930				2000	99	0.2		0.20413	0.20430	2001.6	8.3	78-01-7	N/A	N/A
- 1	7. <u>B</u>	romodichioromethane	35171	101623					NA		NA	0.20207	0.20225	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	ori-rat 43g/kg
11		bromochloromethane	35171	101623						NA NA	0.017	NA	NA NA	1999.6	22.9	75-27-4	N/A	ori-rat 916mg/kg
19		s-1,2-Dichloroethene	35171	101823				2000	NA.	NA	0.017	NA	NA	1999.6	23.0	124-48-1	N/A	
	_	ans-1,2-Dichloroethene	35171					2000	NA	NA	0.017	NA	NA.	1999.7	22.9	156-59-2	N/A	orl-rat 848mg/kg
2	_	nthylene chloride		101623				2000	NA	NA	0.017	NA	NA	1999.6	23.0	158-60-5	N/A	N/A
2			35171	101623			40002.8	2000	NA	NA	0.017	NA	NA	1999.6	22.9	75-09-2		orl-rat 1235mg/kg
		1-Dichloroethene	32251	102023		10.0	20001.6	2000	NA	NA	0.042	NA	NA	The second second			500 ppm	orl-rat 820mg/kg
53		romotorm	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA.	NA	1999.7	20.4	75-35-4	1 ppm (4mg/m3/8H)	orl-rat 200mg/kg
24	_	arbon tetrachioride	95321	020724	0.10	10.00		2000	NA	NA	0.042			1999.8	20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
25	S. CI	hioroform	95321	020724				2000	NA	NA.		NA	NA	1999.8	20.4	56-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
26	B. DI	bromomethane	95321	020724	0.10						0.042	NA NA	NA	2001.9	20.5	67-68-3	60 ppm (240mg/m3) (CL)	orl-ret 908mg/kg
27		1-Dichloroethane	95321	020724				2000	NA	NA	0.042	NA	NA	1999.8	20.5	74-95-3	N/A	orl-rat 108mg/kg
28		2-Dichloropropane	95321					2000	NA	NA	0.042	NA	NA	1999.8	20.5	75-34-3	100 ppm	
29		trachloroethene		020724	0.10			2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	N/A	ori-rat 725mg/kg
30	-	1,1-Trichleroethane	95321	020724	0.10			2000	NA	NA	0.042	NA	NA	2019.6	20.8	127-18-4		N/A
			95321	020724	0.10		20003,0	2000	NA	NA	0.042	NA	NA	1999.8	20.5		25 ppm (170mg/m3/8H)(final)	
31	_	2-Dibromo-3-chioropropane	35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA			71-55-6	350 ppm (1900mg/m3/8H)	orl-rat 10300mg/kg
32		2-Dibromoethane	35161	112322	0.05	5.00	40024.6	2000	NA	NA	0.017	NA.		2000.3	22.9	96-12-8	0.001 ppm	orl-rat 179mg/kg
33		2-Dichlorcethane	35161	112322	0.05		40018.0	2000	NA	NA			NA NA	2000.7	22.9	108-93-4	20 ppm (8H)	orl-rat 108mg/kg
34		2-Dichloropropane	35161	112322	0.05		40051,0	2000	NA	NA	0.017	NA	NA	2000.4	22.9	107-08-2	50 ppm (8H)	orl-rat 670mg/kg
35	1,3	-Dichloropropane	35161	112322	0.05		40005.9				0.017	NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/8I-f)	orl-rat 1947mg/kg
36	1.1	-Dichtoropropena	35161	112322	0.05			2000	NA	NA	0.017	NA	NA	1999.8	22.9	142-28-9	N/A	unr-mus 3600mg/kg
37.	. cis	-1,3-Dichloropropene	35161				40012.1	2000	NA	NA .	0.017	NA	NA	2000.1	29.7	563-58-6	N/A	
		rs-1,3-Dichtoropropene		112322	0.05	5.00	40010.0	2000	NA	NA	0.017	NA	NA	2000.0		0081-01-5	N/A	N/A
			36161	112322	0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4		0061-02-6		N/A
		rachloro-1,3-butadiene	35161	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7		N/A	N/A
		1,2-Tetrachicroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.0		87-68-3	0.02 ppm (0.24mg/m3/8H)	orl-rat 82mg/kg
		2,2-Tetrachloroethane	35161	112322	0.08	5.00	40007.5	2000	NA	NA	0.017	NA				830-20-6	N/A	orl-rat 670mg/kg
42.	1,1	2-Trichioroethane	35161	112322	0.05	5.00	40006.6	2000	NA	NA.	0.017		NA	1999.9	22.9	79-34-5	5 ppm (35mg/m3/9H)(elds)	ori-rat 800mg/kg
		chloroethene	35161	112322	0.05	5.00	40029.0	2000	NA			NA	NA .	1999.8	23.0	79-00-5	10 ppm (45mg/m3/8H)(skin)	orl-rat 836mg/kg
44.	1,2	3-Trichioropropane	35161	112322	0.05	5.00	40007.5	2000		NA	0.017	NA NA	NA	2000.9	22,9	79-01-6	50 ppm (270mg/m3/8H)	orl-mus 2402mg/kg
45.	Ber	nzens	35162	050823	0.05	5.00			NA	NA	0.017	NA	NA	1999.9	22.9	96-18-4	10 ppm (60mg/m3/8H)	orl-ret 149,6mg/kg
46.	Bro	mobenzene	35162	050823			40005.0	2000	NA	NA	0.017	NA	NA	1999.7	22.9	71-43-2	1 ppm	orl-rat 4894mg/kg
		utyl benzene	35162		0.05	5.00	40006.9	2000	NA	NA	0.017	NA	NA	1999.8	22.9	108-86-1	N/A	orl-rat 2000mg/kg
		yl benzene		050823	0.05	5.00	40003.8	2000	NA	NA	0.017	NA	NA	1999.7		104-51-8	N/A	
		opropyl toluene	35162	050823	0.08	5.00	40004.8	2000	NA	NA	0.017	NA	NA	1999.7		100-41-4		N/A
		phthalene	35162	050823	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8			100 ppm (435mg/m3/8H)	orl-rat >2000mg/kg
			35162	050823	0.05	5.00	40008.2	2000	NA	NA	0.017	NA	NA	1999.8		99-87-8	N/A	orl-rat 4750mg/kg
	Sty		35162	050823	0.05	5.00	40004.8	2000	NA	NA	0.017	NA	NA NA	1999.8		91-20-3	10 ppm (50mg/m3/8H)	orl-rat 490mg/kg
	Tol		35162	050823	0.05	5.00	40008.2	2000	NA	NA						00-42-5	100 ppm	orl-rat 5000mg/kg
53.	1,2	3-Trichlorobenzene	35162	050823	0.05	5.00	40003.1	2000	NA	NA NA	0.017	NA	NA	1999.8		08-88-3	200 ppm	orl-rat 5000mg/kg
54.	12	4-Trichlorobenzene	35162	050823	0.05	5.00	40008.8				0.017	NA	NA	1999.7	22.9	87-61-6	N/A	pr-mus 1300mg/kg
56.	1.2	4-Trimethylbenzene	35162	050823	0.05			2000	NA	NA	0.017	NA	NA	1999.8	22.9 1	20-82-1	5 ppm (CL) (40mg/m3)	ori-rat 756mg/kg
		5-Tranethylbenzene	35162			5.00	40001.8	2000	NA	NA	0.017	NA	NA	1999.6	23.0	95-63-6	N/A	
		ylene		050923	0.05	5.00	40006.7	2000	NA	NA	0.017	NA	NA	1999.8		08-87-8	N/A	orl-rat 5g/kg
			35162	050923	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8		08-38-3		orl-rat 5000mg/kg
		Butyl benzene	35163	101923	0.05	5.00	40001.2	2000	NA	NA	0.017	NA	NA	1999.6			100 ppm (435mg/m3/8H)	orl-rat 5g/kg
		Butyl benzene	35163	101923	0.05	5.00	40002.4	2000	NA	NA	0.017	NA				8-08-6	N/A	N/A
		robenzene	36163	101923	0.05	5.00	40003.B	2000	NA	NA	0.017		NA	1999.6		35-96-8	N/A	orl-rat 2240mg/kg
		liorotoluene	35163	101923	0.05	5.00	40000.3	2000	NA NA			NA	NA .	1999.7		08-90-7	75 ppm (350mg/m3/8H)	orl-rat 2290mg/kg
62.	4-CI	niorotoluena	35163	101923	0.05	5.00	40003.3			NA	0.017	NA	NA	1999.5		95-49-8		orl-rat 3900mg/kg
		Dichlorobenzana	35163	101923	0.05			2000	NA	NA	0.017	NA	NA	1999.7	22.9 1	06-43-4		orl-rat 2100mg/kg
		Dichlorobenzene	35163			5.00	40003.8	2000	NÁ	NA	0.017	NA	NA	1999.7		5-50-1		ori-rat 500mg/kg
		Dichlorobenzene		101923	0.05	5.00	40001.7		NA	NA	0.017	NA	NA	1999.6		41-73-1		
				101923	0.08	5.00	40001.8	2000	NA	NA	0.017	NA		1999.6		06-46-7		pr-mus 1062mg/kg
		ropybenzene		101923	0.05	5.00	40000.8	2000	NA	NA	0.017	NA		1999.5			75 ppm (450mg/m3/8H)	ori-rat 500mg/kg
		opylbenzene		101923	0.05	5.00	40003.4		NA	NA	0.017	NA				8-82-8		orl-rat 1400mg/kg
68.			35163	101923	0.05	5.00	40040.8		NA	NA	0.017	NA.		1999.7		03-65-1		orl-rat 6040mg/kg
69.	p-Xy	lene		101923	0.05	5.00	40000.6		NA NA					2001.5		5-47-6	100 ppm (435mg/m3/8H)	pr-mus 1364mg/kg
					The could			2000	.4/1	1473	0.017	NA	NA	1999.5	22.9 10	06-42-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg

^{*} The certified value is the constantation calculated from gravinetate and volumetric advantages at the constant side of the constant s

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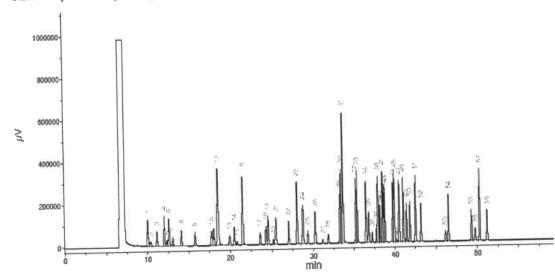
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

Run 16, "P95317 L021624 [2000µg/mL in MeOH]"

Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 8:56:46 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". Analyzed using Method "GC5-M1".

Comments

GC5-M1 Analysis by Candice Warren
Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Air(make-up)=230mL/min.
Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min.
Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),
Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C. FID Signal = Edaq Channel 1 Standard injection = 0.5µL, Range=3



Pagelt III	M person	FID RT (unin.)
1	Espar	9,97
2	1,1,2-THickstorp 1, Z, 3-thiff/concests-are	20.33
3	: Li Dichloroethene	11.10
a.	Acesportation	17.00
9	Lodomethana	12,34
6	Altyl chioride	12.56
7	Carbon disuttida/Hethylene-chloride	13,04
	trans-1,2-Dichlordeshane	14.07
9	1.1-Dichterostnene	15.74
LD	2,2-Dichloropropede	12.74
12	cig-1,3-Gignlorostherid	18.00
12	Hennacrylonistic/Hennyl acrylate/Chloroform	10.49
13	Imputancy 1.1, 1-Trichiprocharie	19,91
14	3.1-Dichiometropisto	25.46
15	Carbon tetrachieride	30.79
16	Benzene/1,2-Diemorgetnene	21.48
19	Trichigepastiere	23,68
18	1,2-Dighter-opropese	24.24
19	Mathyi meshacrylate	24.52
20	Bromomergorametrane	29.13
21	Dipromometherso/2-francouse	25.46
33	cse-1, X-Oscislosphoropina	27.02
23	Solutions	36,03
24	Etroy mathacrysus/trans-3,2-Dicreerparapana	29,73
98	1,1,2-Trichlorgethene	29.34
26	Tetrachiprostana/1,3-Dichloroprophine	30.24
27	Dependention	35.16
28	1.2 Discompetitions	35,384
20	Chlerobenginsk	33,25
30	Ethylbengeners, 3, 2, 2. Tetraesterbethane	31.40
81	m-Sylene/p-Kylene	33,85
32	e-Kylana	35,22
33	Styrene	35,39
34	Inoprogylpenzene/Bréchefouri	35,48
35	cis-1,4-Djeniora-2-butene	345,460
36	1, 1,2,2-Terremieroethene	37.23
27	\$.2.2.Yrankovopropene	37.77
20	n-Propylpanierie	37,42
39	transation-Dichlera-2-buterie	30.05
40	Branchantens	38.14
41	1,3,5-Transthybensens	10.50
42	2-Chieroteiuenk	36,62
43	4:-Chiprotolognik	38.27
44	cart Bucylonicone	29.76
49	1,2,4-Trimeskylbensens	30,91
46	Persachiconet hans	40,17
47	sec-Buty/bensene	40.52
40	p Inopropylsoludite	41.62
49	1,3-Drightgrabenanne	41.42
50	1,4-thicklorobenzene	45,63
51	re-Bucymenteria	42,62
52	1,2-13-chtorobenzene	43.18
53		46,12
54		46,58
55		49.25
56		49.72
8.2		50.74
511	1,2,3-Trichsprobensen4	61.16

Phone: 203-281-2917 FAX: 203-281-2922

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Address

44 Rossotto Dr.

Emergency Telephone USA & CANADA Emergency Telephone International

1-800-535-5053

Hamden CT, 06514

Date Prepared/Revised

1-352-323-3500 January 1, 2024

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225 H370 **Highly Flammable Liquid and Vapor** Cause damage to organs

H351

H301, 311, 331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer

P271 Use in ventilated area

P280

Use gloves, eye protection/face shelld

P302,332

If on skin, wash with soap and water

P305,351,338

If in eyes, remove contacts, rinse with water





Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s)) Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled

In case of skin contact

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Clean цр Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Storage Conditions

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Methanol-SDS.xls Page 1 of 2 Printed: 9/16/24

Absolute Standards Inc.

PO Box 5585 Hamden, CT 06518-0585

Phone: 203-281-2917 FAX: 203-281-2922

		Specific Gravity (H2O = 1)	0.70
Boiling Point	65°C		0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Possibility of hazardous reactions Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

15,400 mg/l - 96 h LC50 24,500.00 mg/l - 48 h EC50 10,000.00 mg/l - 24 h EC100

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II Methanol Proper shipping name:

Section XV. REGULATORY INFORMATION

Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on supervised by a person trained in chemical nandling. The user is responsible for determining the precautions and dangers of this chemical for his or ner particular application. Depending one tisage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have usage as of varied, ABSOLUTE STANDARDS INC. Cannot warn of all the potential use are so varied, ABSOLUTE STANDARDS INC bis chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

Absolute Standards, Inc.

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM Ree 03/17/24



ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Parl Number: 95317 Lot Number: 021624 Description: Universal VOA Megamix 69 components

Solvent(s): Lot# Methanol EG359-USQ12

Expiration Date: 021627 Recommended Storage: Freezer (0 °C) Nominal Concentration (µg/mL): 2000 NIST Test ID#: 8UTB

021624 DATE 021624 DATE Reviewed By

		NIST Test	ID#: BUTB			5E-	05 Balance Una	centulory								per		021624
	1	Weight(s) shown below were combi-	ned and dilut	led to (mL)	: 10		21 Flask Uncer								Reviewed	By:	Pedro L. Rentas	DATE
						0.0	- FARM DICCI	(BEERLA										
			(RM#)	Lot	D	it. Init	al Initial	Nominal	Deutste	0					Expanded		SDS Information	
		Compound	Part Numb		_				Purity	Punity	Uncertainty	Target	Actual	Actual	Uncertainty	(Soli	ent Safety Info. On Atta	ched pa.)
		and the same	7 days Tyuntin	JOH HUTTHUS	PAR PAR	acar ver (mL) Gond.(ug/m	st.) Conc (µg/ml	L) (%)	Uncertainty	Pipetra (mL)	Weight(g)	Weight(g)	Conc (ug/mL)	(+/-) (ug/mL)	CAS#	OSHA PEL (TWA)	LD50
	1. /	Acetonitrile	(0004)															ED30
		Allyl chloride (3-Chloropropene)	(0324)	02164				2000	99.99	0.2	NA	0.20007	0.20020	2001.3	8.1	75-05-8	40 man office a factorism	A CONTRACTOR OF THE PARTY OF TH
		Carbon disulphide	(0325)					2000	99	0.2	NA	0.20207	0.20221	2001.4	8.2	107-05-1	40 ppm (70mg/m3/8H)	ori-rat 2460mg/kg
			(0060)	MKCR8	561 N	A N/	NA NA	2000	99.99	0.2	NA	0.20007	0.20023	2001.6			1 ppm (3mg/m3/8H)	orl-ret 700mg/kg
		cis-1,4-Dichtoro-2-butene	(1196)	147188	EF N.	A N/	NA NA	2000	95	0.2	NA	0.21058	0.21069		8.1	75-15-0	4 ppm (12mg/m3) (skin)	ori-rat 1200mg/kg
		rans-1,4-Dichloro-2-butene	(0486)	MKBP60	41V N	A NA	NA NA	2000	96.5	0.2	NA.	0.20731		2001.1	8.5	1478-11-5	N/A	N/A
		Diethyl einer	(0153)	IK18CAS	000C N.			2000	99.9	0.2	NA		0.20748	2001.7	8.4	110-57-6	N/A	N/A
	7. E	Elhyl methacrylate	(0381)	06128				2000	99	0.2		0.20025	0.20040	2001.5	8.1	60-29-7	WA	N/A
	B. 10	odomethane	(0489)	SHBF87				2000			NA	0.20207	0.20230	2002.3	8.2	97-63-2	N/A	orl-rat 14800mg/kg
	9. 2	2-Methyl-1-propanol	(0445)	15241E					99.5	0.2	NA.	0.20106	0.20121	2001.5	8.2	74-88-4	5 ppm(28mg/m3/6H)(skin)	orl-rat 76mg/kg
1		Methacrylonitrile	(0442)					2000	99.5	0.2	NA.	0.20106	0.20120	2001.4	8.1	78-83-1	50 ppm (150mg/m3/8H)	orl-rat 2460mg/kg
1		dethyl acrylate		004276				2000	99	0.2	NA	0.20207	0.20221	2001,4	8.2	128-98-7	1 ppm (3mg/m3/8H)(skin)	
		dethyl methacrylate	(1075)	SHEKOE				2000	99.9	0.2	NA	0.20025	0.20040	2001.5	8.1	96-33-3		orl-rat 120mg/kg
			(0404)	MKBW51				5000	99.9	0.2	NA	0.20025	0.20041	2001.6	8.1	80-62-6	10 ppm(35mg/m3/8H)(skin)	
	_	Atrobenzene	(0228)	012131		NA NA	NA	2000	99	0.2	NA	0.20207	0.20220	2001.3			100 ррт (410тр/т3/ан)	orl-ret 7872mg/kg
1	_	-Nilropropane	(0481)	14002J	X NA	NA NA	NA.	2000	97.3	0.2	NA	0.20560	0.20577		8.2	98-95-3	1 ppm (5rng/m3/8H)(skin)	orl-rat 780mg/kg
1		entachloroethane	(0450)	HGA0	1 N/	NA.	NA	2000	98	0.2	NA	0.20413		2001.6	8.3	79-46-9	10 ppm (35mg/m3/8H)	orl-ret 720mg/kg
11	8. 1	1.2-Trichlorotrifluoroethane	(0474)	18930	N/	NA.		2000	99	0.2	NA		0.20430	2001.6	8.3	78-01-7	N/A	N/A
- 17	7. <u>B</u>	romodichioromethane	35171	101623	0.0				NA			0.20207	0.20225	2001.8	8.2	76-13-1	1000 ppm (7600mg/m3/8H)	ori-rat 43g/kg
- 18	B. D	bromochloromethane	35171	101623						NA .	0.017	NA	NA	1999.6	22.9	75-27-4	N/A	ori-rat 916mg/kg
19	e. ci	s-1,2-Dichloroethene	35171	101823				2000	NA.	NA	0.017	NA	NA NA	1999.6	23.0	124-48-1	N/A	orl-rat 848mg/kg
20		ans-1,2-Dichloroethene	35171					2000	NA	NA	0.017	NA	NA.	1999.7	22.9	156-59-2	N/A	
21	_	lethylene chloride		101623				2000	NA	NA	0.017	NA	NA	1999.6	23.0	158-60-5	N/A	N/A
22		1-Dichloroethene	35171	101623				2000	NA	NA.	0.017	NA	NA	1999.6	22.9	75-09-2		orl-rat 1235mg/kg
23			32251	102023		10.0	20001.6	2000	NA	NA	0.042	NA	NA	1999.7	20.4		500 ppm	ori-rat 820mg/kg
		romotorm	95321	020724	0.10	10.00	20003.2	2000	NA	NA	0.042	NA	NA	1999.8		75-35-4	1 ppm (4mg/m3/BH)	orl-rat 200mg/kg
24	_	arbon tetrachioride	95321	020724	0.10	10.00	20003.4	2000	NA	NA	0.042	NA	NA		20.5	75-25-2	0.5 ppm (5mg/m3) (skin)	orl-rat 933mg/kg
25		hioroform	95321	020724	0.10	10.00		2000	NA	NA	0.042	NA		1999.8	20.4	56-23-5	2 ppm (12.6mg/m3/8H)	ori-rat 2350mg/kg
26	. DI	bromemthane	95321	020724				2000	NA	NA			NA NA	2001.9	20.5	67-68-3	60 ppm (240mg/m3) (CL)	ori-ret 908mg/kg
27	. 1.	1-Dichloroethane	95321	020724				2000			0.042	NA	NA NA	1999.8	20.5	74-95-3	N/A	orl-rat 108mg/kg
28	. 21	2-Dichloropropane	95321	020724					NA	NA	0.042	NA	NA .	1999.8	20.5	75-34-3	100 ppm	ori-rat 725mg/kg
29		itrachloroethene	95321	020724				2000	NA	NA	0.042	NA	NA	1999.8	20.4	594-20-7	NA	N/A
30	1.1	1,1-Trichleroethane			0.10			2000	NA	NA	0.042	NA	NA	2019.6	20.8	127-18-4	25 ppm (170mg/m3/6H)(final)	
31		2-Dibromo-3-chioropropane	95321	020724	0.10			2000	NA	NA	0.042	NA	NA	1999.8	20.5	71-55-6		
	_		35161	112322	0.05	5.00	40016.5	2000	NA	NA	0.017	NA	NA	2000.3	22.9		350 ppm (1900mg/m3/8H)	orl-rat 10300mg/kg
32		2-Dibromoethane	35161	112322	0.05	5.00	40024.6	2000	NA	NA	0.017	NA	NA			96-12-8	0.001 ppm	orl-ras 179mg/kg
33		2-Dichlorcethane	39161	112322	0.05	5.00	40018.0	2000	NA	NA	0.017	NA	NA NA	2000.7	22.9	108-93-4	20 ppm (8H)	orl-rat 108mg/kg
34		2-Dichloropropane	35161	112322	0.05	5.00	40051,0	2000	NA	NA	0.017			2000.4	22.9	107-08-2	50 ppm (8H)	orl-rat 670mg/kg
35.	1,3	3-Dichloropropane	35161	112322	0.05		40005.9	2000	NA			NA	NA	2002.0	22.9	78-87-5	75 ppm (350mg/m3/8Fg)	orl-rat 1947mg/kg
36,	1.1	-Dichtaropropene	35161	112322	0.05		40012.1	2000		NA	0.017	NA	NA	1999.8	22.9	142-28-9	N/A	1107-mua 3800mg/kg
37.	cis-	-1,3-Dichloropropene	35181	112322	0.05	5.00			NA	NA	0.017	NA	NA	2000.1	29.7	563-58-6	N/A	N/A
		ns-1,3-Dichtoropropene	36161	112322			40010.0	2000	NA	NA	0.017	NA	NA	2000.0		0081-01-5	N/A	N/A
		xachloro-1,3-butadiene			0.05	5.00	40017.6	2000	NA	NA	0.017	NA	NA	2000.4		0061-02-6	NA	
		1,2-Tetrachicroethane	35161	112322	0.05	5.00	40021.9	2000	NA	NA	0.017	NA	NA	2000.6	29.7	87-68-3	0.02 ppm (0.24mg/m3/BH)	N/A
		2,2-Tetrachloroethane	35161	112322	0.05	5.00	40011.9	2000	NA	NA	0.017	NA	NA	2000.1		830-20-6		orl-rat 82mg/kg
			35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA	NA	1999.9	22.9		N/A	orl-rat 670mg/kg
96.	1,3	2-Trichloroethane	35181	112322	0.05	5.00	40006.6	2000	NA	NA	0.017	NA	NA	1999.8	23.0	79-34-5	5 ppm (35mg/m3/9H)(eldn)	ori-rat 800mg/kg
		chloroethene	35161	112322	0.05	5.00	40029.0	2000	NA	NA	0.017	NA	NA			79-00-5	10 ppm (45mg/m3/8H)(skin)	orl-rat 836mg/kg
		,3-Trichioropropane	35161	112322	0.05	5.00	40007.5	2000	NA	NA	0.017	NA		2000.9	22,9	79-01-6	50 ppm (270mg/m3/8i-t)	orl-mus 2402mg/kg
45.	Ber	nzene	35162	050823	0.05	5.00	40005.0	2000	NA	NA	0.017		NA	1999.9	22.9	96-18-4	10 ppm (60mg/m3/8H)	orl-ret 149,8mg/kg
46.	Bro	mobenzene	35162	050823	0.05	5.00	40006.9	2000	NA	NA NA		NA	NA .	1999.7	22.9	71-43-2	1 ppm	orl-rat 4894mg/kg
		lutyl benzene	35162	060823	0.05	5.00	40003.8	2000			0.017	NA	NA	1999.8	22.9	108-86-1	N/A	Orl-rat 2009mg/kg
48.	Eth	lyl benzene	35162	050823	0.05	5.00	40004.8		NA	NA	0.017	NA	NA	1999.7	22.9	104-51-8	N/A	N/A
		sopropyl toluene	35162	050823				2000	NA	NA	0.017	NA	NA.	1999.7		100-41-4	100 ppm (435mg/m3/8H)	ori-rat >2000mg/kg
		phthalene	35162	050823	0.05	5.00	40005.8	2000	NA	NA	0.017	NA	NA	1999.8		99-87-8	N/A	orl-rat 4750mg/kg
	Styr				0.05	5.00	40008.2	2000	NA	NA	0.017	NA	NA	1999.8		91-20-3	10 ppm (50mg/m3/8H)	
	Total		35162	050823	0.05	5.00	40004.8	2000	NA	NA	0.017	NA	NA	1999.7		00-42-5	10 ppm (sumg/ms/sH)	orl-rat 490mg/kg
			35162	050823	0.05	5.00	40008.2	2000	NA	NA	0.017	NA	NA.	1999.8				ori-rat 5000mg/kg
		3-Trichlorobenzene	35162	050823	0.05	5.00	40003.1	2000	NA	NA	0.017	NA	NA	1999.7		08-88-3	200 ppm	orl-rat 5000mg/kg
		4-Trichlorobenzene	35162	050823	0.05	5.00	40006.8	2000	NA	NA	0.017	NA	NA NA			87-61-6	N/A	pr-mus 1390mg/kg
		A-Trimetis/benzene	35162	050823	0.05	5.00	40001.8	2000	NA	NA	0.017			1999.8		20-82-1	8 ppm (CL) (40mg/m3)	ori-rat 756mg/kg
56.	1,3,	5-Trimethylbenzene	35162	050923	0.05	5.00	40006.7	2000	NA	NA		NA	NA	1999.6		95-63-6	N/A	ori-rat 5g/kg
57.	m-)((ylene	35162	050823	0.05	5.00	40005.8	2000			0.017	NA	NA	1999.8		08-87-8	N/A	orl-rat 5000mg/kg
58.	tert-	Butyl benzene	35163	101923	0.05	5.00			NA	NA	0.017	NA	NA	1999.8	22.9 1	08-38-3	100 ppm (435mg/m3/8H)	orl-rat 5g/kg
		Butyl benzene	35163				40001.2	2000	NA	NA	0.017	NA	NA	1999.8		98-06-6	N/A	N/A
		probanzene		101923	0.05	5.00	40002.4	2000	NA	NA	0.017	NA	NA	1999.6		35-96-8	N/A	
		hlorotoluene	36163	101923	0.05	5.00	40003.B	2000	NA.	NA	0.017	NA	NA	1999.7		08-90-7		orl-rat 2240mg/kg
			35163	101923	0.05	5.00	40000.3	2000	NA	NA	0.017	NA	NA	1999.5		95-49-8	75 ppm (350mg/m3/8H)	orl-rat 2290mg/kg
		hiorotoluena	35163	101923	0.05	5.00	40003.3	2000	NA	NA	0.017	NA	NA				60 ppm (250mg/m3/8H)	orl-ret 3900mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40003.8	2000	NA	NA	0.017	NA.		1000.7		06-43-4	N/A	orl-rat 2100mg/kg
		Dichlorobenzene	35163	101923	0.05	5.00	40001.7	2000	NA	NA	0.017		NA	1999.7		5-50-1	50 ppm (300mg/m3) (CL)	orl-rat 500mg/kg
		Dichlorobenzene	35163	101923	0.06	5.00	40001.8	2000	NA	NA NA		NA NA		1999.6		41-73-1	N/A	ipr-mus 1062mg/kg
		ropylbenzene		101923	0.05	5.00	40000.8				0.017	NA		1999.6	22.9 10	06-46-7	75 ppm (450mg/m3/8H)	ori-rat 500mg/kg
		opylbenzene		101923	0.05			2000	NA	NA	0.017	NA		1999.5	22.9 9	8-82-8		orl-rat 1400mg/kg
68.						5.00	40003,4	2000	NA	NA	0.017	NA	NA	1999.7		03-65-1		orl-rat 6040mg/kg
69.				101923	0.05	5.00	40040.8		NA	NA	0.017	NA		2001.5		5-47-6		
	-11		35183	101923	0.05	5.00	40000.6	2000	NA	NA	0.017	NA				08-42-3	100 ppm (435mg/m3/8H)	pr-mus 1364mg/kg
					Tine countd										IN		(VV NEXT) (430m(S/m3/8H))	orl-rat 5g/kg

^{*} The certified value is the constantation calculated from gravinetate and volumetric advantages at the constant side of the constant s

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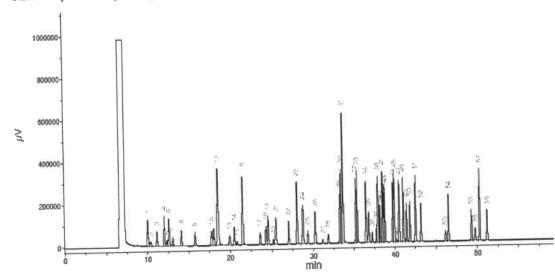
ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

Run 16, "P95317 L021624 [2000µg/mL in MeOH]"

Run Length: 60.00 min, 35998 points at 10 points/second. Created: Sat, Feb 17, 2024 at 8:56:46 AM. Sampled: Sequence "021624-GC5M1", Method "GC5-M1". Analyzed using Method "GC5-M1".

Comments

GC5-M1 Analysis by Candice Warren
Column ID SPB-Vocol 105 meter X 0.53mm X 3.0µm film thickness
Flow rates: Total flow=290mL/min., Helium (carrier)=10mL/min., Air(make-up)=230mL/min.
Helium(make-up)=10mL/min., Hydogen(make-up)=40mL/min., Air(make-up)=230mL/min.
Oven Profile: Temp. 1=35°C (Time 1=10 min.), Temp 2=200°C (Time 2=8.75 min.),
Rate = 4°C/min., Total run time=60 min. Injector temp.=200°C, FID Temp.=200°C. FID Signal = Edaq Channel 1 Standard injection = 0.5µL, Range=3



Pagelt III	M person	FID RT (unin.)
1	Espar	9,97
2	1,1,2-THickstorp 1, Z, 3-thiff/concests-are	20.33
3	: LD chloroethere	11.10
a.	Acesportnia	17.00
9	Lodomethana	12,34
6	Altyl chloride	12.56
7	Carbon disuttida/Hethylene-chloride	13,04
	trans-1,2-Dichlordeshane	14.07
9	1.1-Dichterostnene	15.74
LD	2,2-Dichloropropede	12.74
12	cig-1,3-Gignlorostherid	18.00
12	Hennacrylonistic/Hennyl acrylate/Chloroform	10.49
13	Imputancy 1.1, 1-Trichiprocharie	19,91
14	3.1-Dichiometropisto	25.16
15	Carbon tetrachieride	30.79
16	Benzene/1,2-Diemorgetnene	21.49
19	Trichigepastiere	23,68
18	1,2-Dighter-opropese	24.24
19	Mathyi meshacrylate	24.52
20	Bromomergorametrane	29.13
21	Dipromometherso/2-francouse	25.46
33	cse-1, X-Oscislosphoropina	27.02
23	Solutions	36,03
24	Etror mathacrysus/trans-3,2-Dicreerparapana	29,73
98	1,1,2-Trichlorgethene	29.34
26	Tetrachiprostana/1,3-Dichloroprophine	30.24
27	Dependention	35.16
28	1.2 Discompetitions	35,384
20	Chlerobenginsk	33,25
30	Ethylbengeners, 3, 2, 2. Tetraesterbethane	31.40
81	m-Sylene/p-Kylene	33,85
32	e-Kylana	35,22
33	Styrene	35,39
34	Inoprogylpenzene/Bréchefouri	35,48
35	cis-1,4-Djeniora-2-butene	345,460
36	1, 1,2,2-Terremieroethene	37.23
27	\$.2.2.Yrankneograpene	37.77
20	n-Propylpanierie	37,92
39	transation-Dichlera-2-buterie	30.05
40	Branchantens	38.14
41	1,3,5-Transthybensens	10.50
42	2-Chieroteiuenk	36,62
43	4:-Chiprotolognik	38.27
44	cart Bucylonicone	29.76
49	1,2,4-Trimeskylbensens	30,91
46	Persachiconet hans	40,17
47	sec-Buty/bensene	40.52
40	p Inopropylsoludite	41.62
49	1,3-Drightgrabenanne	41.42
50	1,4-thicklorobenzene	45,63
51	re-Bucymenteria	42,62
52	1,2-13-chtorobenzene	43.18
53		46,12
54		46,58
55		49.25
56		49.72
8.2		50.74
511	1,2,3-Trichsprobensen4	61.16

Phone: 203-281-2917 FAX: 203-281-2922

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Address

44 Rossotto Dr.

Emergency Telephone USA & CANADA Emergency Telephone International

1-800-535-5053

Hamden CT, 06514

Date Prepared/Revised

1-352-323-3500 January 1, 2024

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225 H370 **Highly Flammable Liquid and Vapor** Cause damage to organs

H351

H301, 311, 331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer

P271 Use in ventilated area

P280

Use gloves, eye protection/face shelld

P302,332

If on skin, wash with soap and water

P305,351,338

If in eyes, remove contacts, rinse with water





Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s)) Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

If inhaled

In case of skin contact

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions Clean цр

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Storage Conditions

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation

TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Methanol-SDS.xls

Page 1 of 2

Printed: 9/16/24

Absolute Standards Inc.

PO Box 5585 Hamden, CT 06518-0585

Phone: 203-281-2917 FAX: 203-281-2922

		Specific Gravity (H2O = 1)	0.70
Boiling Point	65°C		0.79
Vapor Pressure (mm Hg)	96	Melting Point	-98°C
Vapor Density (AIR = 1)	1.11	Evaporation rate (Butyl Acetate = 1)	4.6

Solubility in Water

COMPLETE

Appearance and Odor

CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Possibility of hazardous reactions Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed.

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

15,400 mg/l - 96 h LC50 24,500.00 mg/l - 48 h EC50 10,000.00 mg/l - 24 h EC100

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II Methanol Proper shipping name:

Section XV. REGULATORY INFORMATION

Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on supervised by a person trained in chemical nandling. The user is responsible for determining the precautions and dangers of this chemical for his or ner particular application. Depending one tisage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have usage as of varied, ABSOLUTE STANDARDS INC. Cannot warn of all the potential use are so varied, ABSOLUTE STANDARDS INC bis chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

Absolute Standards, Inc.

www.absolutestandards.com



Certified Reference Material CRM

0

https://Absolutestandards.com ANAB ISO 17034 Accredited AR-1539 Certificate Number

CERTIFIED WEIGHT REPORT

Acrolein 091424 91980 Part Number: Lot Number: Description:

Refrigerate (4 °C) 101424 Recommended Storage: **Expiration Date:**

6UTB 5000 Nominal Concentration (µg/mL): NIST Test ID#;

5E-05 Balance Uncertainty 0.001 Flask Uncertainty 10.0 Weight(s) shown below were combined and diluted to (mL):

072324Q

Lot

Solvent(s): Water

DATE DATE 091424 091424 Pedro L. Rentas Justin Dippold of the Formulated By: Reviewed By

orl-rat 46mg/kg **D**50 (Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) 0.1 ppm 107-02-8 CAS# Uncertainty Conc (ug/mL) (+/-) (ug/mL) Expanded 52.5 5008.9 Actual Weight (g) 0.05175 Actual Weight(g) 0.05166 Target Uncertainty Purity 0.5 Purity 8 97 Conc (ug/mL) Nominal 5000 103755V10F Number þ EM# ഗ Compound

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5mm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

TIC: [BSB2]79005,D

Abundance

1. Acrolein

8.93

250000

200002

150000

100000

50000

Scan 232 (8.927 min): [BSB2]79005.D Abundance

27

00009

50000

28

40000

30000

20002

10000

37

Time-->0

65 75 85

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 Shandards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Shandards are certified (+/-) 0.5% of the stated value, unless otherwise stated.
 All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
 Uncertainty Reference: Taylor, B.N. and Kuyat, C.B., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

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Absolute Standards, Inc.

www.absolutestandards.com



Certified Reference Material CRM

0

https://Absolutestandards.com ANAB ISO 17034 Accredited AR-1539 Certificate Number

CERTIFIED WEIGHT REPORT

Acrolein 091424 91980 Part Number: Lot Number: Description:

Refrigerate (4 °C) 101424 Recommended Storage: **Expiration Date:**

6UTB 5000 Nominal Concentration (µg/mL): NIST Test ID#;

5E-05 Balance Uncertainty 0.001 Flask Uncertainty 10.0 Weight(s) shown below were combined and diluted to (mL):

072324Q

Lot

Solvent(s): Water

DATE DATE 091424 091424 Pedro L. Rentas Justin Dippold of the Formulated By: Reviewed By

orl-rat 46mg/kg **D**50 (Solvent Safety Info. On Attached pg.) SDS Information OSHA PEL (TWA) 0.1 ppm 107-02-8 CAS# Uncertainty Conc (ug/mL) (+/-) (ug/mL) Expanded 52.5 5008.9 Actual Weight (g) 0.05175 Actual Weight(g) 0.05166 Target Uncertainty Purity 0.5 Purity 8 97 Conc (ug/mL) Nominal 5000 103755V10F Number þ EM# ഗ Compound

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5mm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

TIC: [BSB2]79005,D

Abundance

1. Acrolein

8.93

250000

200002

150000

100000

50000

Scan 232 (8.927 min): [BSB2]79005.D Abundance

27

00009

50000

28

40000

30000

20002

10000

37

Time-->0

65 75 85

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 Shandards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
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Certified Reference Material CRM Dec

0

2-Chloroethyl vinyl ether

Description:

Lot Number:

Part Number:

CERTIFIED WEIGHT REPORT

20524

Refrigerate (4 °C)

Recommended Storage:

Nominal Concentration (µg/mL):

Expiration Date:

10000 **6UTB**

120527

nttps://Absolutestandards.com Lots Solvent(s):

SDS Information

Uncertainty Expanded

Actual

Actual

Uncertainty

Purity

Nominal

5E-05 0.001

50.0

Weight(s) shown below were combined and diluted to (mL):

NIST Test ID#:

Methanol EJ143-US	() 3.	Short Cheuler	120524
けるかはファ	Formulated By:	Prashant Chauhan	DATE
014940	1/2	In Herris	120524
Balance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
Flask Uncertainty			

orl-rat 250mg/kg (Solvent Safety Info. On Attached pg.) Method: GC6MSD-1.M. Detector: MSD. Column: (60m X 0.25mm X 1.5 μm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., OSHA PEL (TWA) M 110-75-8 CAS# (+/-) (ng/mL) 40.5 Conc(µg/mL) 10002.9 Weight (g) 0.50550 Weight (g) 0.50536 Target Purity 0.2 8 66 Injector B Temp = 200°C, Detector B Temp, = 220°C. Analyst: Candice Warren. Conc (vg/ml.) 10000 **MKCD0033** Lot Number 74 **8*** 2-Chloroethyl vinyl ether Compound

14000

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18000

20000

Abradance

160000

9000

9000

40000

9000

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 - Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (++) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps light and under appropriate laboratory conditions.
 Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

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Phone: 203-281-2917 FAX: 203-281-2922

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA **Emergency Telephone International**

1-800-535-5053

Address 44 Rossotto Dr. Hamden CT, 06514

Date Prepared/Revised

1-352-323-3500 January 1, 2024

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225

Highly Flammable Liquid and Vapor

H301, 311, 331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer

H370 P271

Cause damage to organs

H351 P280

Use gloves, eye protection/face shelld

P302.332

Use in ventilated area If on skin, wash with soap and water

P305,351,338

If in eyes, remove contacts, rinse with water







Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s)) Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Clean up

Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.

Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Phone: 203-281-2917 FAX: 203-281-2922

Boiling Point		Specific Gravity (H2O = 1)	
	65°C		0.79
Vapor Pressure (mm Hg)		Melting Point	
	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability Possibility of hazardous reactions

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

LC50 15,400 mg/l - 96 h EC50 24,500.00 mg/l - 48 h EC100 10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

Certified Reference Material CRM Dec

0

2-Chloroethyl vinyl ether

Description:

Lot Number:

Part Number:

CERTIFIED WEIGHT REPORT

20524

Refrigerate (4 °C)

Recommended Storage:

Nominal Concentration (µg/mL):

Expiration Date:

10000 **6UTB**

120527

nttps://Absolutestandards.com Lots Solvent(s):

SDS Information

Uncertainty Expanded

Actual

Actual

Uncertainty

Purity

Nominal

5E-05 0.001

50.0

Weight(s) shown below were combined and diluted to (mL):

NIST Test ID#:

Methanol EJ143-US	() 3.	Short Cheuler	120524
けるかはファ	Formulated By:	Prashant Chauhan	DATE
014940	1/2	In Herris	120524
Balance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
Flask Uncertainty			

orl-rat 250mg/kg (Solvent Safety Info. On Attached pg.) Method: GC6MSD-1.M. Detector: MSD. Column: (60m X 0.25mm X 1.5 μm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., OSHA PEL (TWA) M 110-75-8 CAS# (+/-) (ng/mL) 40.5 Conc(µg/mL) 10002.9 Weight (g) 0.50550 Weight (g) 0.50536 Target Purity 0.2 8 66 Injector B Temp = 200°C, Detector B Temp, = 220°C. Analyst: Candice Warren. Conc (vg/ml.) 10000 **MKCD0033** Lot Number 74 **8*** 2-Chloroethyl vinyl ether Compound

14000

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20000

Abradance

160000

9000

9000

40000

9000

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
 - Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (++) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps light and under appropriate laboratory conditions.
 Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

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Phone: 203-281-2917 FAX: 203-281-2922

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA **Emergency Telephone International**

1-800-535-5053

Address 44 Rossotto Dr. Hamden CT, 06514

Date Prepared/Revised

1-352-323-3500 January 1, 2024

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225

Highly Flammable Liquid and Vapor

H301, 311, 331 Toxic if swallowed, skin contact, inhaled Suspected of causing cancer

H370 P271

Cause damage to organs

H351 P280

Use gloves, eye protection/face shelld

P302.332

Use in ventilated area If on skin, wash with soap and water

P305,351,338

If in eyes, remove contacts, rinse with water







Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s)) Methanol

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Clean up

Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.

Storage Conditions

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Phone: 203-281-2917 FAX: 203-281-2922

Boiling Point		Specific Gravity (H2O = 1)	
	65°C		0.79
Vapor Pressure (mm Hg)		Melting Point	
	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability Possibility of hazardous reactions

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

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Eye damage/eye irritation

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Toxic if swallowed

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LC50 15,400 mg/l - 96 h EC50 24,500.00 mg/l - 48 h EC100 10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

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Certified Reference Material CRM Dec

0

2-Chloroethyl vinyl ether

Description:

Lot Number:

Part Number:

CERTIFIED WEIGHT REPORT

20524

Refrigerate (4 °C)

Recommended Storage:

Nominal Concentration (µg/mL):

Expiration Date:

10000 **6UTB**

120527

nttps://Absolutestandards.com Lots Solvent(s):

SDS Information

Uncertainty Expanded

Actual

Actual

Uncertainty

Purity

Nominal

5E-05 0.001

50.0

Weight(s) shown below were combined and diluted to (mL):

NIST Test ID#:

Methanol EJ143-US	() 3.	Short Cheuler	120524
けるかはファ	Formulated By:	Prashant Chauhan	DATE
014940	1/2	In Herris	120524
Balance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
Flask Uncertainty			

orl-rat 250mg/kg (Solvent Safety Info. On Attached pg.) Method: GC6MSD-1.M. Detector: MSD. Column: (60m X 0.25mm X 1.5 μm). Oven Profile: Temp 1 = 35°C (Time 1=10min.), Temp 2 = 200°C (Time 2=8.75 min.), Rate = 4°C/min., OSHA PEL (TWA) M 110-75-8 CAS# (+/-) (ng/mL) 40.5 Conc(µg/mL) 10002.9 Weight (g) 0.50550 Weight (g) 0.50536 Target Purity 0.2 8 66 Injector B Temp = 200°C, Detector B Temp, = 220°C. Analyst: Candice Warren. Conc (vg/ml.) 10000 **MKCD0033** Lot Number 74 **8*** 2-Chloroethyl vinyl ether Compound

14000

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Abradance

160000

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90009

40000

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Phone: 203-281-2917 FAX: 203-281-2922

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name ABSOLUTI

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA

1-800-535-5053 1-352-323-3500

Address 4

44 Rossotto Dr. Hamden CT. 06514 Emergency Telephone International Date Prepared/Revised

1-352-323-3500 January 1, 2024

Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Highly Flammable Liquid and Vapor

Cause damage to organs Use in ventilated area H301, 311, 331 Toxic if swallowed, skin contact, inhaled

H351 Suspected of causing cancer

P271 Use in ven P302.332 If on skin.

If on skin, wash with soap and water

P280 P305,351,338

CAS#: 67-56-1

Use gloves, eye protection/face shelld If in eyes, remove contacts, rinse with water



H225

H370





Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))

Methanol METHYL ALCOHOL

% (optional) > 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area.

If inhaled

If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. Wash with soap and water. Consult a physician.

In case of skin contact

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Clean up Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge.

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use. Eye protection

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

Methanol-SDS.xls Page 1 of 2 Printed: 12/5/24

PO Box 5585 Hamden, CT 06518-0585 Phone: 203-281-2917 FAX: 203-281-2922

Boiling Point		Specific Gravity (H2O = 1)	
	65°C		0.79
Vapor Pressure (mm Hg)		Melting Point	
-	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability Possibility of hazardous reactions

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames, sparks, extreme temperature and sunlight.

Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Section XI. TOXICOLOGICAL INFORMATION

LD50 Oral - rat - 5,628 mg/kg

LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

Toxic if absorbed through skin. Causes skin irritation.

Eye damage/eye irritation

Toxic if inhaled. Causes respiratory tract irritation.

Toxic if swallowed

Section XII. ECOLOGICAL INFORMATION FOR REPORTABLE QUANTITY OF 5000 lbs.

LC50 15,400 mg/l - 96 h EC50 24,500.00 mg/l - 48 h EC100 10,000.00 mg/l - 24 h

Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

Section XV. REGULATORY INFORMATION

OSHA Hazards Flammable liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Irritant SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section XVI. Misc. INFORMATION

The information in this Material Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and Global Harmonized System (GHS). This document is intended only as a guide to the appropriate precautionary handling of the material by trained personnel, or supervised by a person trained in chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, ABSOLUTE STANDARDS INC. cannot warn of all the potential dangers of use or interaction with other chemicals or substances. ABSOLUTE STANDARDS INC. warrants that the chemical meets the specifications set forth on the label. ABSOLUTE STANDARDS INC DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR APPLICATION. The user should recognize that this product can cause severe injury or death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Absolute Standards Inc. will periodically revise this Safety Data Sheet. If you have any questions, please call Technical Service at 1-203-281-2917 for assistance.

https://Absolutestandards.com

www.absolutestandards.com

Certified Reference Material CRM Dee



0

Lots Solvent(s):

95318

Part Number:

CERTIFIED WEIGHT REPORT

Methanol EJ143-US	7	Show Cheuler	120524
りゃ のいりオーフ	Formulated By:	Prashant Chauhan	DATE
014943	The	to Horto	120524
lance Uncertainty	Reviewed By:	Pedro L. Rentas	DATE
sk Uncertainty			

orl-rat 250mg/kg

M

110-75-8

40.5

10002.9

0.50550

0.50536

0.2

66

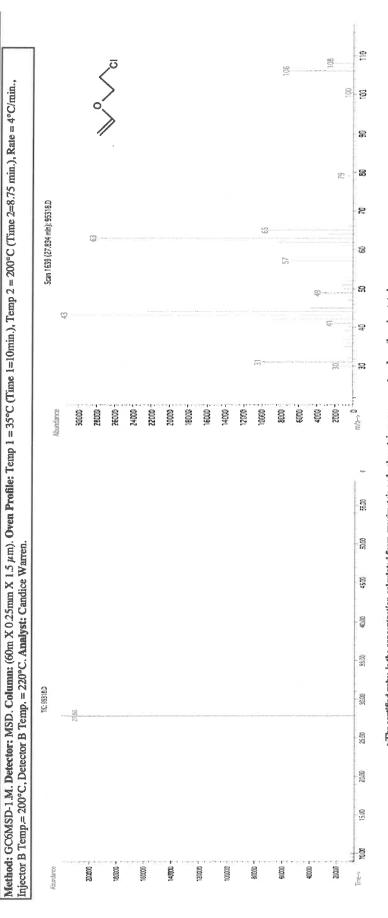
10000

MKCD0033

74

1. 2-Chloroethyl vinyl ether

낆	120524				Methanol EJ143-US		1	1	
Chlor	oethy	2-Chloroethyl vinyl ether			(from Cheuler	120524
				7	りゃ のぶりオーフ	٥	Formulated	By: Prashant Chauhan	DATE
120527								1	
Refrigerate (4 °C)	ite (4	())	できの ナコ		*	A	
10000							\	ledo plento	120524
6UTB			5E-05	Balance Uncertainty			Reviewed By	: Pedro L. Rentas	DATE
Weight(s) shown below were combined and diluted to (mL):		20.0	0.001	0.001 Flask Uncertainty					
							Expanded	SDS Information	
		Nominal	Purity	Purity Uncertainty	Target Actual	Actual	Uncertainty	Uncertainty (Solvent Safety Info. On Attached pg.)	i pg.)
Lot Number	- 1	RM# Lot Number Conc (ug/mil.)	(%)	Purity	Weight (g) Weight (g)	Conc(ug/mL) (++-) (ug/mL)	(+/-) (ng/mL)	CAS# OSHA PEL (TWA)	LDSO



- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
 Standards are certified (+/-1) 0.5% of the stated value, unless otherwise stated.
 All Standards, after opening ampule, should be stored with caps light and under appropriate laboratory conditions.
 Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

PO Box 5585 Hamden, CT 06518-0585 Phone: 203-281-2917 FAX: 203-281-2922

Safety Data Sheet (SDS)

GHS/OSHA Compliant

Section I Product and Company Identification

IDENTITY ANALYTICAL STANDARD DISSOLVED IN METHANOL

Manufacturer's Name

ABSOLUTE STANDARDS INC

Emergency Telephone USA & CANADA

1-800-535-5053

Address

44 Rossotto Dr.

Emergency Telephone International Date Prepared/Revised

1-352-323-3500 January 1, 2024

Hamden CT, 06514 Section II - Hazards Identification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

H225

Highly Flammable Liquid and Vapor

H301, 311, 331 Toxic if swallowed, skin contact, inhaled

H370

Cause damage to organs

H351 P280 Suspected of causing cancer

P271 P302.332

Use in ventilated area If on skin, wash with soap and water

P305,351,338

Use gloves, eye protection/face shelld If in eyes, remove contacts, rinse with water



Methanol





Signal Word: DANGER

Section III - Composition

Components (Specific Chemical Identity; Common Name(s))

METHYL ALCOHOL

CAS#: 67-56-1

% (optional) > 97

See Certified Weight Report For Other Analytes Present At Trace Quantities.

INTENDED USE: REFERENCE MATERIAL

Section IV. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move to safe area. If inhaled, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

If inhaled In case of skin contact

Wash with soap and water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Do NOT induce vomiting. Rinse mouth with water. Consult a physician.

Section V. FIREFIGHTING MEASURES

Flammability

If swallowed

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from

heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media Protective equipment for fire

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Wear self contained breathing apparatus for fire fighting if necessary.

Section VI. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of

ignition. Vapours accumulate to form explosive concentrations.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Clean up

Contain spillage, and then collect and place in container for disposal according to local regulations (see section 13).

Section VII. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use ventilation Keep away from sources of ignition. No smoking. Prevent the build up of electrostatic charge. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed

Storage Conditions and kept upright to prevent leakage.

Section VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Methanol

67-56-1 TWA 200 ppm

Skin notation TWA 200 ppm

Potential for skin absorption, ingestion and inhalation.

Personal protective equipment Respiratory protection Handle with gloves. Gloves must be inspected prior to use.

Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling the product.

Section IX - Physical/Chemical Characteristics

PO Box 5585 Hamden, CT 06518-0585 Phone: 203-281-2917 FAX: 203-281-2922

Boiling Point		Specific Gravity (H2O = 1)	
	65°C		0.79
Vapor Pressure (mm Hg)		Melting Point	
-	96		-98°C
Vapor Density (AIR = 1)		Evaporation rate	7
	1.11	(Butyl Acetate = 1)	4.6
Solubility in Water COMPLETE			^

COMPLETE

Appearance and Odor CLEAR, COLORLESS LIQUID WITH CHARACTERISTIC PUNGENT ODOR.

Section X. STABILITY AND REACTIVITY

Chemical stability Possibility of hazardous reactions

Stable under recommended storage conditions. Vapours may form explosive mixture with air.

Conditions to avoid

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Materials to avoid

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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LC50 Inhalation - rat - 4 h - 64000 ppm LD50 Dermal - rabbit - 15,800 mg/kg

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Eye damage/eye irritation

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Section XIII. DISPOSAL CONSIDERATIONS

Dispose with normal Laboratory Solvent Waste.

Section XIV. TRANSPORT INFORMATION

DOT (US)

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

UN number: 1230 Class: 3 Packing group: II

Proper shipping name:

Methanol

Section XV. REGULATORY INFORMATION

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CERTIFIED REFERENCE MATERIAL









110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30067 Lot No.: A0191805

Description: 4-Bromofluorobenzene Standard

4-Bromofluorobenzene Standard 2,500µg/mL, P&T Methanol,

1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

Expiration Date: November 30, 2027 Storage: 0°C or colder

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1-Bromo-4-fluorobenzene (BFB)	460-00-4	184975	99%	2,483.9 μg/mL	+/- 139.5488

Ship:

Ambient

Solvent:

P&T Methanol

CAS # 67-56-1 Purity 99%

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

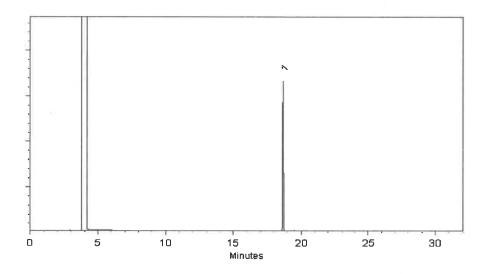
Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol 1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Alicia Leathers - Operation Technician I

Date Mixed:

17-Nov-2022

Balance Serial #

B251644995

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

21-Nov-2022

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- · Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\ \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

 The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
 information, with the knowledge/understanding that open product stability is subject to the specific handling and
 environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with
 most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom
 ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861,
 which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



8			



CERTIFIED REFERENCE MATERIAL









110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309

Certificate of Analysis gravimetric

www.restek.com

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

555582

Lot No.: A0196865

Description:

Custom 8260A/B Surrogate Mix

Custom 8260A/B Surrogate Mix 25,000µg/mL, P&T Methanol,

1mL/ampul

Container Size: **Expiration Date:** 2 mL

April 30, 2026

Pkg Amt:

> 1 mL

Storage:

10°C or colder

Ship:

Ambient

CERTIFIED VALUES

Componen t#	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2-Dichloroethane-d4	17060-07-0	PR-32845	99%	25,036.0 μg/mL	+/- 1,417.9179
2	1-Bromo-4-fluorobenzene (BFB)	460-00-4	184975	99%	25,132.0 μg/mL	+/- 1,423.3549
3	Dibromofluoromethane	1868-53-7	022013	99%	25,040.0 μg/mL	+/- 1,418.1445
4	Toluene-d8	2037-26-5	PR-33397	99%	25,028.0 μg/mL	+/- 1,417.4648

Solvent:

P&T Methanol

CAS#

67-56-1

Purity

99%

Parker 7. Brown Russ Bookhamer - Operations Technician i

Date Mixed:

11-Apr-2023

Balance: 1127510105



Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- · Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

 The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
 information, with the knowledge/understanding that open product stability is subject to the specific handling and
 environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with
 most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom
 ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861,
 which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely
 dissolved.



CERTIFIED REFERENCE MATERIAL







110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30489

Lot No.: A0209618

Description:

8260B Acetates Mix

8260B Acetates Mix 2,000 µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

September 30, 2025

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Methyl acetate	79-20 - 9	SHBP3100	99%	2,019.3 μg/mL	+/- 69.7974
2	Vinyl acetate	108-05-4	RP231030CTH	98%	2,016.8 μg/mL	+/- 69.7112
3	Ethyl acetate	141-78-6	SHBQ9682	99%	2,010.7 μg/mL	+/- 69.4979
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,016.0 μg/mL	+/- 69.6822
5	Propyl acetate	109-60-4	P8XLN	99%	2,008.0 μg/mL	+/- 69.4057
6	Butyl acetate	123-86-4	SHBP6314	99%	2,007.3 μg/mL	+/- 69.3826
7	Amyl acetate	628-63-7	41325/1	97%	2,004.7 μg/mL	+/- 69.2905

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1

Purity 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol, For this



reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

Quality Confirmation Test

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

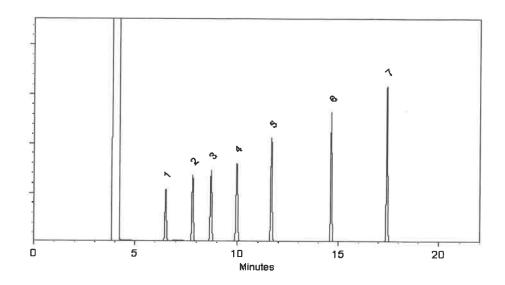
Inj. Temp: 200°C

Det. Temp: 250°C

Det. Type:

Split Vent: 40 ml/min

Inj. Vol



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Sam Moodler - Operations Tech I

Date Mixed:

28-Mar-2024

Balance Serial #

B707717271

Dillan Murphy - Operations Technician I

Date Passed:

01-Apr-2024

Expiration Notes:

- · Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





CERTIFIED REFERENCE MATERIAL







110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30489

Lot No.: A0209618

Description:

8260B Acetates Mix

8260B Acetates Mix 2,000 µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

September 30, 2025

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Methyl acetate	79-20 - 9	SHBP3100	99%	2,019.3 μg/mL	+/- 69.7974
2	Vinyl acetate	108-05-4	RP231030CTH	98%	2,016.8 μg/mL	+/- 69.7112
3	Ethyl acetate	141-78-6	SHBQ9682	99%	2,010.7 μg/mL	+/- 69.4979
4	Isopropyl acetate	108-21-4	BCCG7069	99%	2,016.0 μg/mL	+/- 69.6822
5	Propyl acetate	109-60-4	P8XLN	99%	2,008.0 μg/mL	+/- 69.4057
6	Butyl acetate	123-86-4	SHBP6314	99%	2,007.3 μg/mL	+/- 69.3826
7	Amyl acetate	628-63-7	41325/1	97%	2,004.7 μg/mL	+/- 69.2905

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1

Purity 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions, esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol, For this



reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

Quality Confirmation Test

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

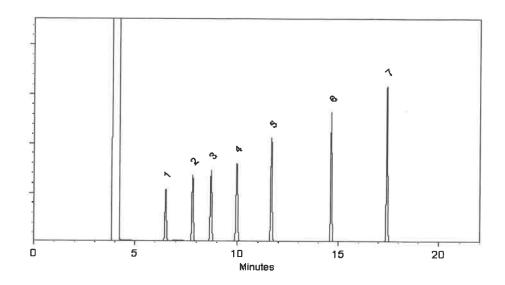
Inj. Temp: 200°C

Det. Temp: 250°C

Det. Type:

Split Vent: 40 ml/min

Inj. Vol



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Sam Moodler - Operations Tech I

Date Mixed:

28-Mar-2024

Balance Serial #

B707717271

Dillan Murphy - Operations Technician I

Date Passed:

01-Apr-2024

Expiration Notes:

- · Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309 110 Benner Circle

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Certificate of Analysis

gravimetric

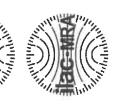


CERTIFIED REFERENCE MATERIAL



enence Material Prod Certificate #3222.01





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Lot No.: A0210184 555581 Catalog No.:

Custom 8260 Internal Standard Mix Description: Custom 8260 Internal Standard Mix 25,000µg/mL, P&T Methanol,

1mL/ampul

> 1 mL Pkg Amt: 2 mL Container Size:

Storage: April 30, 2027 **Expiration Date:**

10°C or colder

Ambient

Ship:

VALUES CERTIFIED

Componen t#	Compound	CAS#	Lot#	Purity Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1 PR-30447	PR-30447	99% 25,212.0 μg/mL	+/- 1,427.8857
2	1,4-Difluorobenzene	540-36-3	MKCS8657	99% 25,220.0 µg/mL	+/- 1,428.3388
3	Chlorobenzene-d5	3114-55-4 PR-31132	PR-31132	99% 25,116.0 µg/mL	+/- 1,422.4487
4	Pentafluorobenzene	363-72-4	363-72-4 MKCR9383	99% 25,180.0 µg/mL	+/- 1,426.0734

P&T Methanol CAS# **Solvent:**

67-56-1 %66 Purity

John Friedline - Operations Technician I Mr. T. Hi.

11-Apr-2024 Date Mixed:

Balance:

1127510105



Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD GC/MS, LC/MS, RI, and/or melting point.
- Þ Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers
 - Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula: The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

The ampuls are over-filled to ensure The packaged amount is the minimum sample size for which uncertainty is valid. that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware

Handling Notes

- environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely



2 of 2



Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

30019





Certificate of Analysis chromatographic plus

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V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10),

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol/Water (90:10)

CAS# 67-56-1/7732-18-5

Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μΕCD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\,uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\,stability}^2 + u_{shipping\,stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
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 which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

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V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10),

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol/Water (90:10)

CAS# 67-56-1/7732-18-5

Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μΕCD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
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 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

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Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

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V14697-to-147

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10),

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol/Water (90:10)

CAS# 67-56-1/7732-18-5

Purity

99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

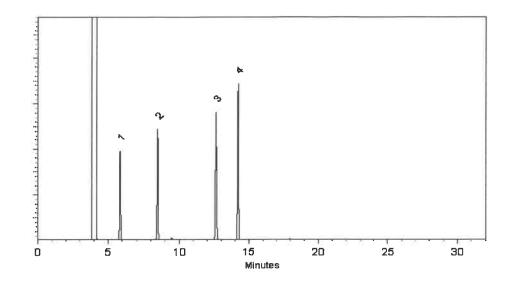
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

 1μ l



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μΕCD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\,uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\,stability}^2 + u_{shipping\,stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





Dec 12/17/24 **CERTIFIED REFERENCE MATERIAL**

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V14697-to-147





FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30006

Lot No.: A0210618

Description:

VOA Calibration Mix #1

VOA Calibration Mix #1 5,000µg/mL, P&T Methanol/Water(90:10),

1mL/ampul

Container Size:

2 mL

Pkg Amt:

> 1 mL

Expiration Date:

July 31, 2027

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Acetone	67-64-1	SHBQ8504	99%	5,014.8 μg/mL	+/- 173.2883
2	2-Butanone (MEK)	78-93-3	SHBQ4704	99%	5,012.4 μg/mL	+/- 173.2054
3	4-Methyl-2-pentanone (MIBK)	108-10-1	SHBP9200	99%	5,011.6 μg/mL	+/- 173.1777
4	2-Hexanone	591-78-6	MKCQ6663	99%	5,013.0 μg/mL	+/- 173.2261

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol/Water (90:10)

CAS# 67-56-1/7732-18-5

Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

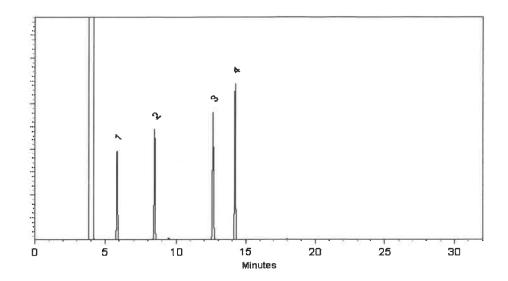
CID II

Split Vent:

40 ml/min

Inj. Vol

 1μ l



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Dakota Parson - Operations Technician I

Date Mixed:

22-Apr-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

24-Apr-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μΕCD, GC/MS, LC/MS, RI, and/or melting point.
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 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\,uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\,stability}^2 + u_{shipping\,stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



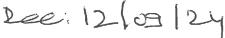


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10 vial. **CERTIFIED REFERENCE MATERIAL**



Certificate of Analysis

chromatographic plus









FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30225

Lot No.: A0214960

Description:

Bromochloromethane Standard

Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size: Expiration Date: 2 mL

August 31, 2029

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	SYN240416CTH	99%	2,012.0 μg/mL	+/- 113.0519

* Expanded Uncertainty displayed in same units as Gray. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

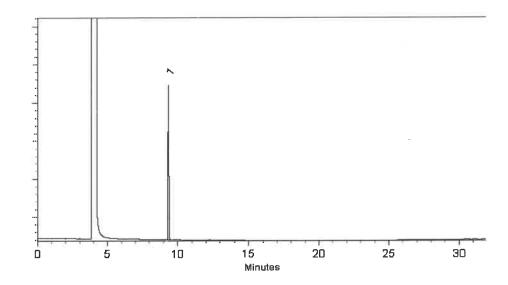
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μΙ



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacy & Clam

Date Mixed:

08-Aug-2024

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Stacey Wanner - Operations Technician I

Date Passed:

14-Aug-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- · Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

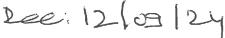


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10 vial. **CERTIFIED REFERENCE MATERIAL**



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30225

Lot No.: A0214960

Description:

Bromochloromethane Standard

Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size: Expiration Date: 2 mL

August 31, 2029

Pkg Amt:

> 1 mL

Storage:

0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	SYN240416CTH	99%	2,012.0 μg/mL	+/- 113.0519

* Expanded Uncertainty displayed in same units as Gray. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

Det. Type:

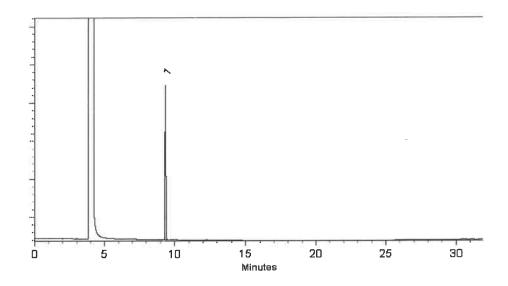
FID

Split Vent:

40 ml/min

Inj. Vol

1μΙ



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacy & Warn

Stacey Wanner - Operations Technician I

Date Mixed:

08-Aug-2024

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

14-Aug-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- · Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily
using NIST traceable weights, and/or dilutions with Class A glassware.

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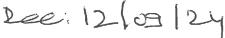


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10 vial. **CERTIFIED REFERENCE MATERIAL**



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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30225

Lot No.: A0214960

Description:

Bromochloromethane Standard

Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size: Expiration Date: 2 mL

August 31, 2029

Pkg Amt: > 1 mL

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	SYN240416CTH	99%	2,012.0 μg/mL	+/- 113.0519

* Expanded Uncertainty displayed in same units as Gray. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

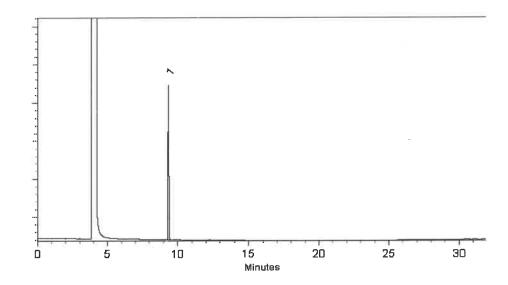
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μΙ



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Stacy & Clam

Date Mixed:

08-Aug-2024

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Stacey Wanner - Operations Technician I

Date Passed:

14-Aug-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
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- · Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

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uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

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Manufacturing Notes:

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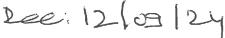


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10 vial. **CERTIFIED REFERENCE MATERIAL**



Certificate of Analysis

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30225

Lot No.: A0214960

Description:

Bromochloromethane Standard

Bromochloromethane 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size: Expiration Date: 2 mL

August 31, 2029

Pkg Amt: > 1 mL

Storage:

0°C or colder

Ship:

Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Bromochloromethane	74-97-5	SYN240416CTH	99%	2,012.0 μg/mL	+/- 113.0519

* Expanded Uncertainty displayed in same units as Gray. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1 Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C @ 8°C/min. (hold 5 min.)

Inj. Temp:

200°C

Det. Temp:

250°C

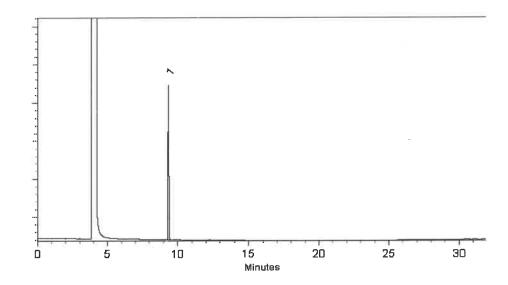
Det. Type:

Split Vent:

40 ml/min

Inj. Vol

1μΙ



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacy & Clam

Date Mixed:

08-Aug-2024

Balance Serial #

1127510105

Jennifer Pollino - Operations Tech III - ARM QC

Stacey Wanner - Operations Technician I

Date Passed:

14-Aug-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- · Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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using NIST traceable weights, and/or dilutions with Class A glassware.

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- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL 30 mid











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Certificate of Analysis

chromatographic plus

V14727 to

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30042

Lot No.: A0216826

Description:

502.2 Calibration Mix #1

502.2 Calibration Mix #1 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

May 31, 2031

Storage:

0°C or colder

Ship: **Ambient**

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Dichlorodifluoromethane (CFC-12)	75-71-8	00022922	99%	2,000.9 μg/mL	+/- 112.4144
2	Chloromethane (methyl chloride)	74-87-3	00022694	99%	2,000.7 μg/mL	+/- 112.3998
3	Vinyl chloride	75-01-4	00015559	99%	2,000.3 μg/mL	+/- 112.3779
4	Bromomethane (methyl bromide)	74-83-9	00017022	99%	2,001.8 μg/mL	+/- 112.4650
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,000.1 μg/mL	+/- 112.3700
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCJ8658	99%	2,000.7 μg/mL	+/- 112.3992

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# **Purity**

67-56-1 99%

Column:

60m x 0.25mm x 1.4µm Rtx-502.2 (cat.#10916)

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

40°C (hold 6 min.) to 100°C

@ 6°C/min.

Inj. Temp:

200°C

Det. Temp:

250°C

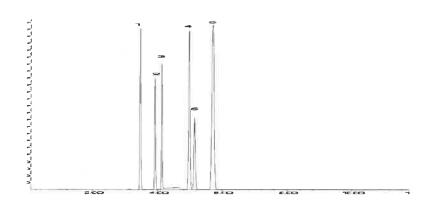
Det. Type:

MSD

Split Vent:

Split ratio 10:1

Inj. Vol 1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Tom Suckar Mix Technician

Date Mixed:

23-Sep-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

04-Oct-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

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CERTIFIED REFERENCE MATERIAL 30 mid











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Certificate of Analysis

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V14727 to

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

30042

Lot No.: A0216826

Description:

502.2 Calibration Mix #1

502.2 Calibration Mix #1 2,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

2 mL

Pkg Amt: > 1 mL

Expiration Date:

May 31, 2031

Storage:

0°C or colder

Ship: **Ambient**

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Dichlorodifluoromethane (CFC-12)	75-71-8	00022922	99%	2,000.9 μg/mL	+/- 112.4144
2	Chloromethane (methyl chloride)	74-87-3	00022694	99%	2,000.7 μg/mL	+/- 112.3998
3	Vinyl chloride	75-01-4	00015559	99%	2,000.3 μg/mL	+/- 112.3779
4	Bromomethane (methyl bromide)	74-83-9	00017022	99%	2,001.8 μg/mL	+/- 112.4650
5	Chloroethane (ethyl chloride)	75-00-3	107-401039114-1	99%	2,000.1 μg/mL	+/- 112.3700
6	Trichlorofluoromethane (CFC-11)	75-69-4	MKCJ8658	99%	2,000.7 μg/mL	+/- 112.3992

^{*} Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# **Purity**

67-56-1 99%

Column:

60m x 0.25mm x 1.4µm Rtx-502.2 (cat.#10916)

Carrier Gas:

helium-constant flow 2.0 mL/min.

Temp. Program:

40°C (hold 6 min.) to 100°C

@ 6°C/min.

Inj. Temp:

200°C

Det. Temp:

250°C

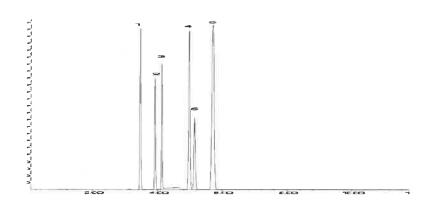
Det. Type:

MSD

Split Vent:

Split ratio 10:1

Inj. Vol 1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Tom Suckar Mix Technician

Date Mixed:

23-Sep-2024

Balance Serial #

B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed:

04-Oct-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL









110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic plus

V14842 to 14846

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.: 30470 Lot No.: A0217535

Description: tert-Butanol Standard tert-Butanol Std 50,000µg/mL, P&T Methanol, 1mL/ampul

Container Size: 2 mL Pkg Amt: > 1 mL

October 31, 2027

Storage: 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	tert-Butanol (TBA)	75-65-0	SHBQ8002-1	99%	50,007.5 μg/mL	+/- 717.6137

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: P&T Methanol

Expiration Date:

CAS # 67-56-1 Purity 99%

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp: 200°C

Det. Temp:

250°C

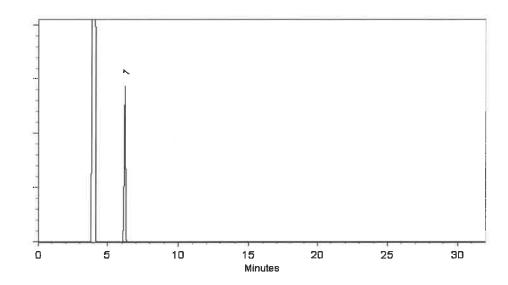
Det. Type:

FID

Split Vent: 40 ml/min

Inj. Vol

1μl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Aaron Enyart - Operations Tech I

Date Mixed:

07-Oct-2024

Balance Serial #

B251644995

Brittany Federinko - Operations Tech I

Date Passed:

09-Oct-2024

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/µECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\ \sqrt{u_{gravimetric}^2 +\ u_{homogeneity}^2 +\ u_{storage\ stability}^2 +\ u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

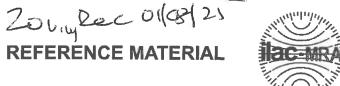
Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
 information, with the knowledge/understanding that open product stability is subject to the specific handling and
 environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with
 most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom
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 which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL











110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic

V14803-V14822

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

555408-SL

Lot No.: A0220471

Description:

Custom Vinyl Acetate Standard

Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

June 30, 2026

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Vinyl acetate	108-05-4	RD240423RSR	99%	8,066.0 μg/mL	+/- 278.7979

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1 **Purity** 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions. esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp: 200°C

Det. Temp:

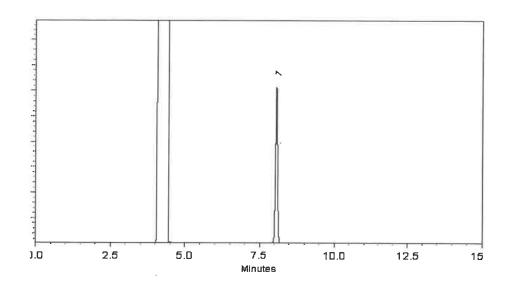
250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol **1**µľ



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stead Ethan Winiarski - Operations Tech I

Date Mixed:

24-Dec-2024

Balance Serial #

1127510105

Dillan Murphy - Operations Technician I

Date Passed:

02-Jan-2025

REVIEWED By January Polision at 7:12 um, Jan 63, 2025

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A
 correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the
 parent compound in solution.
- · Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

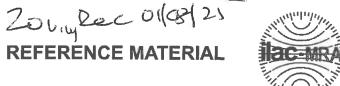
Manufacturing Notes:

• Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through
 the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability
 information, with the knowledge/understanding that open product stability is subject to the specific handling and
 environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with
 most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom
 ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861,
 which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.



CERTIFIED REFERENCE MATERIAL











110 Benner Circle Bellefonte, PA 16823-8812 Tel: 1-814-353-1300 Fax: 1-814-353-1309

www.restek.com

Certificate of Analysis

chromatographic

V14803-V14822

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No.:

555408-SL

Lot No.: A0220471

Description:

Custom Vinyl Acetate Standard

Custom Vinyl Acetate Standard 8,000µg/mL, P&T Methanol, 1mL/ampul

Container Size:

Pkg Amt:

> 1 mL

Expiration Date:

June 30, 2026

Storage:

-20°C or colder

Handling:

This product is photosensitive.

Ship: On Ice

CERTIFIED VALUES

Elution Order	Compound	CAS#	Lot#	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty (95% C.L.; K=2)
1	Vinyl acetate	108-05-4	RD240423RSR	99%	8,066.0 μg/mL	+/- 278.7979

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent:

P&T Methanol

CAS# 67-56-1 **Purity** 99%

Tech Tips:

Vinyl acetate is a volatile organic ester included in the target lists of several US EPA and other methods. Under acidic conditions. esters react with alcohols to form new esters (transesterification). Methanol-based mixes containing halogenated compounds are slightly acidic, so it is important to minimize exposure of vinyl acetate to mixes of halogenated compounds in methanol. For this reason, we offer vinyl acetate in individual solution, and suggest that it be introduced into the working level calibration solution immediately before use. This will minimize problems and ensure more consistent results.

Column:

105m x 0.53mm x 3.0μm Rtx-502.2 (cat.#10910)

Carrier Gas:

hydrogen-constant pressure 11.0 psi.

Temp. Program:

40°C (hold 2 min.) to 240°C

@ 8°C/min. (hold 5 min.)

Inj. Temp: 200°C

Det. Temp:

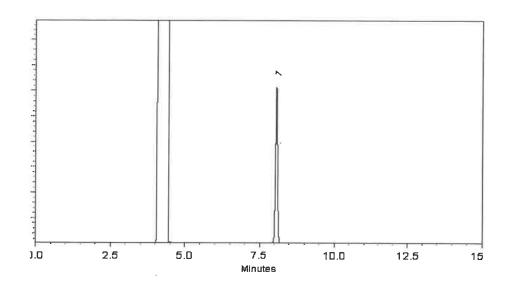
250°C

Det. Type:

Split Vent:

40 ml/min

Inj. Vol **1**µľ



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stead Ethan Winiarski - Operations Tech I

Date Mixed:

24-Dec-2024

Balance Serial #

1127510105

Dillan Murphy - Operations Technician I

Date Passed:

02-Jan-2025

REVIEWED By January Polision at 7:12 um, Jan 63, 2025

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

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- · Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded
uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability
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k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

• The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

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V14921 to V14938

Material No.: 9077-02
Batch No.: 24G0262002
Manufactured Date: 2024-05-14
Expiration Date: 2027-05-14

Revision No.: 0

Certificate of Analysis

Test	Specification	Docul+
lest	Specification	Result
Assay (CH ₃ OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	< 1.0 ppm	
Titrable Acid (µeq/g)	< 0 3	
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	< 0.08 %	\
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	~ -

For Laboratory,Research,or Manufacturing Use Performance Tested for Use in EPA Methods 500 Series for Drinking Water 600 Series for Wastewater 846 for Solid Waste

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak

Director Quality Operations, Bioscience Production





V14921 to V14938

Material No.: 9077-02
Batch No.: 24G0262002
Manufactured Date: 2024-05-14
Expiration Date: 2027-05-14

Revision No.: 0

Certificate of Analysis

Test	Specification	Docul+
lest	Specification	Result
Assay (CH ₃ OH) (by GC, corrected for water)	≥ 99.9 %	100.0 %
Residue after Evaporation	< 1.0 ppm	
Titrable Acid (µeq/g)	< 0 3	
Titrable Base (µeq/g)	≤ 0.10	0.03
Water (by KF, coulometric)	< 0.08 %	\
Volatile Organic Trace Analysis - Below EPA 8260B CRQL	Conforms	~ -

For Laboratory,Research,or Manufacturing Use Performance Tested for Use in EPA Methods 500 Series for Drinking Water 600 Series for Wastewater 846 for Solid Waste

Country of Origin: USA
Packaging Site: Phillipsburg Mfg Ctr & DC

Jamie Croak

Director Quality Operations, Bioscience Production

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM

Dec 05/2



ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number:

91980

5.0109

041725Q

Lot Number: 051925 Description: Acrolein

Expiration Date:

061925

J14944-V14948

Formulated By: Lawrence Barry 051925 DATE

Reviewed By:

051925 DATE

Nominal Concentration (µg/mL): NIST Test ID#:

Recommended Storage:

5000

6UTB

Refrigerate (4 °C)

5E-05 Balance Uncertainty

Uncertainty

Weight(s) shown below were combined and diluted to (mL):

10.0

5000

Flask Uncertainty

Expanded

SDS Information

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.)

Compound

Lot Number

Nominal Purity Conc (µg/mL) (96)

97

Purity

Target Weight(g)

Actual Weight(g)

27

Actual Uncertainty Conc (µg/mL) (+/-) (µg/mL)

CAS# OSHA PEL (TWA) LD50

1. Acrolein

Abundance

103755V10F

0.5

0.05166 0.05170

5004.1

52.5 107-02-8 0.1 ppm

orl-rat 46mg/kg

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C (Time 2 = 8.75 min.) Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

TIC: [BSB2]79005.D

Abundance

Scan 232 (8.927 min): [BSB2]79005.D

8.93 250000

60000 50000

56

150000

200000

30000

40000

100000

20000

50000

10000

37

75 85

119 60 70 80 90 100 110 120 130 140 150 160 170

158 169

Time-->0

• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

. Standards are prepared gravimetrically using balances that are calibrated by an ISO 17025 certified organization with weights traceable through NIST to the SI kilogram (see above).

• Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

· All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.

. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result." NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). Rev 1.0, 2/25/2025

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM

Dec 05/2



ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number:

91980

5.0109

041725Q

Lot Number: 051925 Description: Acrolein

Expiration Date:

061925

J14944-V14948

Formulated By: Lawrence Barry 051925 DATE

Reviewed By:

051925 DATE

Nominal Concentration (µg/mL): NIST Test ID#:

Recommended Storage:

5000

6UTB

Refrigerate (4 °C)

5E-05 Balance Uncertainty

Uncertainty

Weight(s) shown below were combined and diluted to (mL):

10.0

5000

Flask Uncertainty

Expanded

SDS Information

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.)

Compound

Lot Number

Nominal Purity Conc (µg/mL) (96)

97

Purity

Target Weight(g)

Actual Weight(g)

27

Actual Uncertainty Conc (µg/mL) (+/-) (µg/mL)

CAS# OSHA PEL (TWA) LD50

1. Acrolein

Abundance

103755V10F

0.5

0.05166 0.05170

5004.1

52.5 107-02-8 0.1 ppm

orl-rat 46mg/kg

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C (Time 2 = 8.75 min.) Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

TIC: [BSB2]79005.D

Abundance

Scan 232 (8.927 min): [BSB2]79005.D

8.93 250000

60000 50000

56

150000

200000

30000

40000

100000

20000

50000

10000

37

75 85

119 60 70 80 90 100 110 120 130 140 150 160 170

158 169

Time-->0

• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

. Standards are prepared gravimetrically using balances that are calibrated by an ISO 17025 certified organization with weights traceable through NIST to the SI kilogram (see above).

• Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

· All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.

. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result." NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). Rev 1.0, 2/25/2025

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Certified Reference Material CRM

Dec 05/2



ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number:

91980

5.0109

041725Q

Lot Number: 051925 Description: Acrolein

Expiration Date:

061925

J14944-V14948

Formulated By: Lawrence Barry 051925 DATE

Reviewed By:

051925 DATE

Nominal Concentration (µg/mL): NIST Test ID#:

Recommended Storage:

5000

6UTB

Refrigerate (4 °C)

5E-05 Balance Uncertainty

Uncertainty

Weight(s) shown below were combined and diluted to (mL):

10.0

5000

Flask Uncertainty

Expanded

SDS Information

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.)

Compound

Lot Number

Nominal Purity Conc (µg/mL) (96)

97

Purity

Target Weight(g)

Actual Weight(g)

27

Actual Uncertainty Conc (µg/mL) (+/-) (µg/mL)

CAS# OSHA PEL (TWA) LD50

1. Acrolein

Abundance

103755V10F

0.5

0.05166 0.05170

5004.1

52.5 107-02-8 0.1 ppm

orl-rat 46mg/kg

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C (Time 2 = 8.75 min.) Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

TIC: [BSB2]79005.D

Abundance

Scan 232 (8.927 min): [BSB2]79005.D

8.93 250000

60000 50000

56

150000

200000

30000

40000

100000

20000

50000

10000

37

75 85

119 60 70 80 90 100 110 120 130 140 150 160 170

158 169

Time-->0

• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

. Standards are prepared gravimetrically using balances that are calibrated by an ISO 17025 certified organization with weights traceable through NIST to the SI kilogram (see above).

• Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00

· All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.

. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result." NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). Rev 1.0, 2/25/2025

800-368-1131 www.absolutestandards.com



Certified Reference Material CRM

Dec 05/2



ANAB ISO 17034 Accredited AR-1539 Certificate Number https://Absolutestandards.com

051925

051925

DATE

DATE

CERTIFIED WEIGHT REPORT

Part Number: Lot Number:

Description:

91980 051925

Acrolein

Lot

5.0109

J14944-V14948

041725Q

Actual

Expiration Date: 061925

Recommended Storage: Refrigerate (4 °C)

Nominal Concentration (µg/mL):

5000 NIST Test ID#: **6UTB**

5E-05 Balance Uncertainty

Weight(s) shown below were combined and diluted to (mL):

Flask Uncertainty

Uncertainty

Purity

10.0

Nominal

Expanded

Reviewed By:

Formulated By:

SDS Information

Lawrence Barry

Pedro L. Rentas

(Solvent Safety Info. On Attached pg.) Actual Uncertainty

Compound Number Conc (µg/mL) (96) Purity Weight(g) Conc (µg/mL) (+/-) (µg/mL) CAS# OSHA PEL (TWA) Weight(g) LD50 1. Acrolein 103755V10F 5000 97 0.5 0.05166 0.05170 5004.1 52.5 107-02-8 orl-rat 46mg/kg 0.1 ppm

Target

Method: GC6MSD-1. Detector: Mass Selective Detector (Scan mode). Column: Vocol (60m X 0.25mm ID X 1.5µm film thickness). Oven Profile: Temp. 1 = 35°C (Time 1 = 10min.), Temp. 2=200°C (Time 2 = 8.75 min.) Rate = 4°C/min., Injector Temp. = 200°C, Detector Temp. = 220°C, Analyst: Pedro Rentas. NOTE: Due to the instability of acrolein in solution, all solutions of acrolein, and any dilutions thereof, should be used immediately Long term storage is not recommended. Please contact our technical department if further information is required.

Abundance	TIC: [BSB2]79005.D	bundance	Sca 27	nn 232 (8.927 min):	[BSB2]79005.D	
250000	8.93	60000				
200000	\ /_\o	50000		56		
150000		40000				
		30000				
100000		20000				
50000		10000	37			
Time>	10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00	m/z> ⁰ 20	44 0 30 40 50	65 75 85 60 70 80 90	119 100 110 120 130 14	158 169 0 150 160 170

. The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

. Standards are prepared gravimetrically using balances that are calibrated by an ISO 17025 certified organization with weights traceable through NIST to the SI kilogram (see above).

• Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.

· All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.

. Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result." NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994). Rev 1.0, 2/25/2025

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